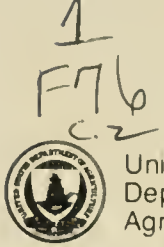


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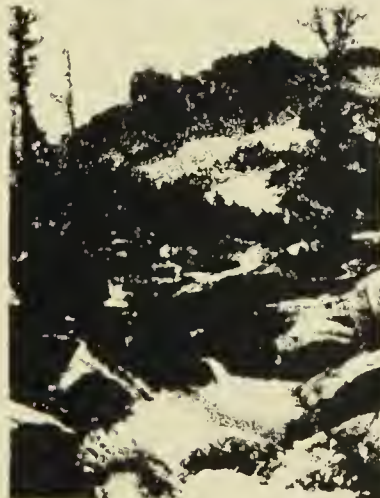
Forest
Service

Washington, D.C.



Report of the Forest Service

Fiscal Year 1982



United States
Department of
Agriculture

**Forest
Service**

February 1983

Report of the Forest Service

Fiscal Year 1982

Summary

I am pleased to transmit the Report of the Forest Service for fiscal year 1982.

The report describes Forest Service accomplishments during the year. Activities involved direct investment in and improved management of National Forests and Grasslands and cooperative Federal assistance to managers of State and private forest and range lands. These activities are supported and facilitated by a substantial program of Forest Service research.

Fiscal year 1982 expenditures totaled \$1,993.4 million, down from the 1981 figure of \$2,263.3 million. This reduction reflected the realignment in priorities and a decrease in capital investment funding. Increased efficiency in several program areas made possible a reduction in employment from 45,423 FTE's in 1981 to 42,948 FTE's in 1982.

On the other side of the ledger, the National Forest System programs continued to generate money for the Treasury through sales of timber, mineral leasing, fees for grazing cattle and other uses. Revenues for 1982 totaled \$730 million, which was 64 percent of the \$1.143 billion collected in 1981. This decline resulted from the major downward spiral in housing and the general state of the economy. Timber and other forest resource revenues dropped 49 percent--from \$680 million in 1981 to \$350 million in 1982. Timber harvest and other wood products revenues were \$251 million in 1982, down from \$581.4 million in 1981. The significant decrease in timber receipts was only slightly offset by a 31 percent increase in recreation receipts.

Following are highlights of the 1982 accomplishments:

Forest Research focused on development of better ways to increase natural resource production on 1.6 billion acres of private and public forest and range land in the U.S., while protecting environmental and amenity values. Thus, emphasis during 1982 was on:

- Expanding timber supplies through increased effectiveness of wood utilization; identification of ways to improve use of nonmarket resources, such as recreation; and increasing the productivity of rangeland.
- Continuation of work in developing integrated pest management, wildlife habitat management, rehabilitation of mined areas, multi-resource evaluation, silviculture and plant genetics systems.
- Completion of the fourth year of the Forestry Intensified Research (FIR)

program, addressing difficult regeneration problems in southwestern Oregon and northern California.

- Initiation of the first international jointly funded research program of its kind, in which Canada and the United States will study their common spruce budworm problems.
- Discovery and patent at the Forest Products Laboratory of pressure steam drying of lumber, which offers potential for reduction of manufacturing costs.

State and Private Forestry programs were directed particularly at cooperative activities to increase softwood supplies from private, nonindustrial forest lands. They include technological assistance to timber growers and wood manufacturers, as well as protection of nonindustrial private and State lands from fire, insects and disease, and State forest resource planning. Among major efforts to achieve these in 1982 were:

- Completion of 13 State forest resource plans.
- Conduct of prevention and suppression activities on a near-record outbreak of gypsy moths in the Northeastern United States and suppression work against a major spruce budworm outbreak in the Northeast and the Pacific Northwest.
- Use of the "Fire Economic Analysis" determined that current total level of expenditures can provide efficient protection to State and private wildlands with some reallocation among States.
- Determination that the Forestry Incentives Program was yielding an 8.6 percent rate of return on investments, after inflation.
- Publication of a construction manual, in cooperation with the National Association of Homebuilders, and other technology transfer activities to promote the truss-framed system technique for reducing the cost of home construction.

National Forest System programs emphasized substantial increases in outputs of wood, forage, recreation, wildlife and fish habitat, and minerals from National Forest lands. Among steps taken in that direction were:

- Offering of 100 million board feet in timber sales above the funded target of 11 billion board feet.

- Fuel treatment of 24,000 acres more than the funded target of 312,000 acres of National Forest System land.
- Preparation of 29,405 mineral operating plans, 7,400 more than funded for the year.
- Simplification of regulations for preparation of land management plans required by the National Forest Management Act; development and distribution for public comment of draft Regional Guides in all regions; and completion of 14 draft forest plans.
- Hosting of 233.4 million recreation visitor days on the National Forests.
- Provision of grazing use of 9.9 million animal unit months, 1 percent more than the funded program, although grazing receipts were down because of a reduction in grazing fees specified by law.
- Acquisition through donation by Pennzoil Company of a 100,000-acre parcel of the Vermejo Ranch in northern New Mexico for addition to the National Forest System.
- Entry into a unique cooperative effort with the State of New Mexico to manage the wildlife habitat of the Vermejo tract (now Valle Vidal) for high quality hunting and fishing for which fees will be charged and receipts returned to the area for habitat improvement.
- Coordination of law enforcement efforts with local, State and other Federal agencies, resulting in progress toward eradicating marijuana growing on National Forest land, particularly in California, Oregon and Arkansas.
- Reforestation of sufficient acreage (380,000) to remain on schedule for meeting the congressionally established goal of liquidating the National Forest reforestation backlog by the end of 1985.
- Completion of a management plan for the congressionally designated Mount St. Helens National Volcanic Monument to provide protection of this unique geological area.
- Recording of one of the best fire seasons ever, primarily because of the cool, moist weather throughout the West, resulting in both total acreage burned and total firefighting costs being substantially below average.

The Human Resources Programs provide job opportunities and training for youth, elderly and others, while carrying out high priority conservation work. Activities in pursuit of this goal included:

- Operation of 18 Civilian Conservation Centers which enrolled 3,676 people who performed \$15.4 million worth of work.
- Employment of 4,288 people in the Senior Community Service Employment Program who performed work valued at \$22.8 million.
- Operation of a Young Adult Conservation Corps program, until its termination in August, which enrolled 8,555 unemployed and out-of-school youths who performed work valued at \$25.2 million.
- Acceleration of the Volunteers in the National Forests program, resulting in accomplishment by over 42,000 volunteers of about \$15 million worth of work which otherwise would have been foregone.

Two major activities in fiscal year 1982 were related to national economic conditions.

As mentioned, the timber economy was severely buffeted, and the Forest Service made considerable effort to counter the significant adverse effects on the industry, especially the softwood sawtimber industry, and dependent communities. Because of poor demand resulting from the low rate of housing starts, many companies and individuals who purchased National Forest timber during the high inflation period found these sales were economically infeasible to harvest on today's market.

To avert large-scale disruption of the industry, the Forest Service allowed extensions of timber sale contracts. The agency also deferred payments on some required deposits during the extension periods. In addition, procedures used by the agency to sell National Forest timber were changed to help counter speculation, by providing for more orderly bidding and prompt harvesting of timber in the future.

The second major activity was the need for a substantial reduction in the size and operating cost of the agency. In response to the President's effort to streamline the Federal Government structure, many Forest Service initiatives were undertaken in 1982. They were designed to achieve the reduction by improving the overall efficiency of the agency, without significantly diminishing quality of service to the public.

Careful controls on meeting attendance and travel were instituted. A number of reorganizations were conducted, including the consolidation of the Southeastern Area State and Private Forestry office in Atlanta with the Regional Forester's office there. To varying degrees, the Washington Office and seven National Forest System Regional Offices reorganized their internal structures and reduced staffing to achieve expected savings of about \$7.4 million annually. Significant reductions were made in road costs and other

program activities. These actions made it possible to stay within a 1982 budget 12 percent below the year before and to accomplish staff reductions of 4 percent from the 1981 year.

To help accomplish some activities and programs the public might have lost through this streamlining process, the Forest Service accelerated its campaign to solicit the help of volunteers. The number of volunteers more than doubled during the year.

A handwritten signature in cursive script, reading "R. Max Peterson".

R. MAX PETERSON
Chief

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ADMINISTRATION

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Introduction

THE FOREST SERVICE--WHAT IT IS AND WHAT IT DOES

The Forest Service is responsible for national leadership in forestry, influencing the management of about one-third of the Nation's total land. This land includes such diverse areas as forests, range and grasslands, alpine areas, lakes, and streams. The Forest Service is a highly decentralized organization in the Federal Government, with most of the day-to-day decisions made at the local level. The guiding principle for land use is "the greatest good to the greatest number in the long run." The major jobs include:

Management of the National Forests and Grasslands

The Forest Service manages 191 million acres of public lands consisting of 155 National Forests, 19 National Grasslands, and 18 Land Utilization Projects located in 44 States, Puerto Rico, and the Virgin Islands. Some of the diverse management and protection activities include selling timber, enhancing wildlife habitats, identifying property boundaries, designing and building roads, managing campgrounds, building trails, fighting fires, controlling avalanches, and monitoring water quality.

Cooperative Forestry

The Forest Service cooperates with the States and territories, local governments, forest industries, and private landowners to promote good forestry practices on non-Federal forest lands and to increase the efficient use of wood. Most of the technical and financial assistance is provided through the State forestry organizations. Assistance is extended for a varied mix of projects such as: controlling tree diseases and damaging insects and rodents, producing improved seedlings, reducing soil erosion, using trees for energy conservation, reforestation, improving timber stands, protecting against fire, and developing wildlife habitats.

Forest Research

The Forest Service research organization is assigned the mission of providing leadership in forest and rangeland research throughout the United States. The Forest Service researchers conduct a wide variety of studies in the areas of biological, physical, and social sciences. This work is often done in conjunction with State agricultural colleges. Results of the research are made available to the public and other government personnel through publications, films, and computer programs. This research includes developing disease-resistant seedlings, mapping lightning fires, controlling forest pests, and obtaining more useable products from wood processing operations.

The Forest Service also represents the U.S. Government in most world forestry matters. In cooperation with the Department of State and the Food and Agriculture Organization (FAO) of the United Nations, the Forest Service provides technical assistance to other countries to help solve their forestry related problems.

Human Resource Development

Ever since the Civilian Conservation Corps of the 1930's, National Forests have been used to provide work and training for the Nation's underemployed. Today, the Forest Service participates in many human resource programs aimed at putting people to work and improving living conditions in rural areas.

FOREST AND RANGELAND RENEWABLE RESOURCES PLANNING ACT (RPA)

Overview of RPA

The Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), as amended, directs the Secretary of Agriculture to prepare a comprehensive, long-range assessment of the Nation's renewable resources and to develop a Program for Forest Service activities.

The RPA Assessment, required every 10 years, provides detailed information on the renewable forest and rangeland resources--timber, range, water, fish, wildlife, outdoor recreation, and wilderness. It includes projection of future supply and demand for each of those resources and spells out potential opportunities to meet the Nation's future needs for these resources.

The RPA Program is updated every 5 years. It is based on the findings of the Assessment and displays a long-range program for the Forest Service for research, for cooperative activities, and for the National Forest System. The RPA Program represents the Secretary of Agriculture's recommended level of future outputs and costs for these Forest Service programs. This Program, accompanied by a Statement of Policy from the President, is transmitted to Congress. These documents, as well as other policy direction, serve as a guide to Forest Service planning and provide one basis for the development of annual budget proposals.

The first RPA Assessment and Program was completed in 1975. The second Assessment was completed in 1979 and the second Program in 1980.

The Program update for 1985 is underway. This effort is largely based on the 1979 Assessment. However, the Assessment will be supplemented where additional data or analysis will improve the understanding of the renewable resources situation, or will change the 1979 findings.

This Assessment Supplement will be completed and available in late 1983. The Program update will be transmitted to Congress in late 1984.

The revised Statement of Policy is on page 166 of this report.

Annual Report to Congress

The act also requires the Secretary to submit an Annual Report to Congress on Forest Service accomplishments and progress in implementing the RPA Program. This report covers fiscal year 1982 3/.

Required in the report are:

--A description of the status of major research programs, significant findings, and how these findings will be applied in National Forest System management and in State and Private Forest Service programs.

--A description of the cooperative forestry assistance programs including status, accomplishments, needs, and work backlogs.

--A report on the progress of incorporating the legislatively required standards and guidelines into the land management plans for units of the National Forest System.

--A summary of estimated expenditures, on a representative sample basis, for reforestation, timber stand improvement, and the sale of timber from the National Forest System, compared to the return to the Government from such timber sales.

--An identification, on a representative sample basis, of advertised timber sales made below the estimated expenditures mentioned above.

This document includes other reports that Congress requires at the time of the annual report. These are:

--A report identifying the amount and location, by Forest, State, and productivity class, where practicable, of all lands in the National Forest System where land management plans have indicated the need to reforest areas that have been cut over or otherwise denuded or deforested and all lands with stands of trees that are not growing at their best potential.

--A report estimating the appropriations necessary to replant and otherwise treat an acreage equal to the acreage to be cut over that year, plus a sufficient portion of the backlog of lands found to be in need of treatment to eliminate the backlog

between the passage of RPA and the end of fiscal year 1985.

--A report on the amounts, types, and uses of herbicides and pesticides used in the National Forest System, including the beneficial or adverse effects of such uses.

3/ Unless otherwise stated, all references to years in this report are fiscal years.

National Forest System

INTRODUCTION

The Forest Service is responsible for the management and protection of the 191 million acres of National Forest System (NFS) land, the majority of which is in the Western United States (figure 1).

The natural resources on these lands are some of the Nation's greatest assets, and how these resources are used and protected affects the economic, environmental, and social well-being of every citizen. Renewable resources including recreational opportunities, forage, wood, wilderness, wildlife and fish habitat, and water are the products of the National Forests. Nonrenewable resources such as oil, gas, coal, and hardrock minerals are also produced.

Most funded targets for fiscal year 1982 have been met or exceeded. Tables 1 and 2 show the percentages of accomplishments as well as funding. Discussion of the key activities, outputs, and other program information follow.

LAND MANAGEMENT PLANNING

Planning Process

The National Forest Management Act (NFMA) of 1976 directed the Secretary of Agriculture to develop a land and resource management plan for each administrative unit of the National Forest System (NFS) by 1985. Regulations were developed in 1979 to guide this effort. The regulations require integrated planning for all resources, i.e., recreation, fish and wildlife habitat, water, timber, range, and wilderness.

In 1982, the regulations were revised to streamline the land management planning process. The final rules became effective November 1, 1982.

Status of Regional Guides

Regional Guides (formerly Regional Plans) establish standards and guidelines, reflect goals and objectives of the RPA Program consistent with resource capabilities, and display tentative resource objectives for each National Forest. The nine draft Regional Plans, which were issued for public comment in fiscal year 1982, will be completed as Regional Guides early in fiscal year 1983.

Status of Forest Plans

Under NFMA requirements, 121 administrative units are to prepare individual Forest Plans. In fiscal year 1982, 14 draft Forest Plans were filed with the Environmental Protection Agency. The final land management plan for the Mount St. Helens area was also published.

Draft Forest Plans for the remaining National Forests are scheduled for completion in fiscal year 1983, with publication to be finished in early 1984. The Forest planning data will be available for the 1985 RPA Program analysis.

Draft Forest Plan Environmental Statements
Filed with the Environmental Protection
Agency in 1982 by Forest Service Region

Northern Region

* Lolo (MT)
Beaverhead (MT)
Lewis & Clark (MT)

Rocky Mountain Region

* Black Hills (SD)
* Arapaho-Roosevelt (CO)
* Nebraska (NE)
San Juan (CO)
Pike-San Isabel (CO)

Southwestern Region

* Santa Fe (NM)

Intermountain Region

* Uinta (UT)
* Targhee (ID)

Pacific Southwest Region

* Sierra (CA)

Pacific Northwest Region

Okanogan (WA)

Alaska Region

Chugach (AK)

* Draft Forest Plans completed in fiscal year 1981, but filed in fiscal year 1982.

RESOURCE PROTECTION

Minerals

A total of 29,405 operating plans was processed in fiscal year 1982, exceeding the 1982 RPA scheduled output by 45 percent. Accomplishment exceeded the fiscal year 1982 funded program by 34 percent. A national goal of energy self-sufficiency, growing mineral needs, and tighter control of supplies of various commodities by foreign countries has resulted in this substantial increase in leasing and mining activity on NFS lands.

The major role of the Forest Service in mineral and energy exploration and development is protecting and managing the affected surface resources. In addition, the agency cooperates with the Department of the Interior, primarily the Minerals Management Service and the Bureau of Land Management, which are responsible for the administration of the subsurface energy and mineral resources on all Federal lands. Where exploration, development, and production of these resources may significantly affect the environment, the Forest Service prepares environmental impact statements as required by law.

The Forest Service United States Department of Agriculture



Figure 1. National Forests and other lands administered by the Forest Service

Energy resources found beneath NFS lands are oil, natural gas, coal, geothermal steam, and uranium. Minerals of strategic importance include chromium, nickel, tungsten, and molybdenum. Gold, copper, zinc, silver, and phosphate are also found in significant amounts.

With more lease applications and operating plans being submitted than anticipated, the backlog at the end of fiscal year 1982 increased to an estimated 7,200 unprocessed lease applications and operating plans. This compares to a backlog of 5,200 plans at the end of fiscal year 1981. In this backlog, there were 1,400 unprocessed lease applications in congressionally designated wilderness, 500 in wilderness study areas, 1,000 in RARE II recommended wilderness areas, and 400 in RARE II further planning areas.

Receipts from rents, royalties, sales, and bonus bids for minerals have leveled off from their historical increases because of the general downturn in the U.S. economy. These receipts were an estimated \$126.5 million in fiscal year 1982 (figure 3).

As more lands with mineral potential are leased, the number of new lease applications will decrease, but operating plan administration will increase dramatically. These administrative activities include protection of renewable

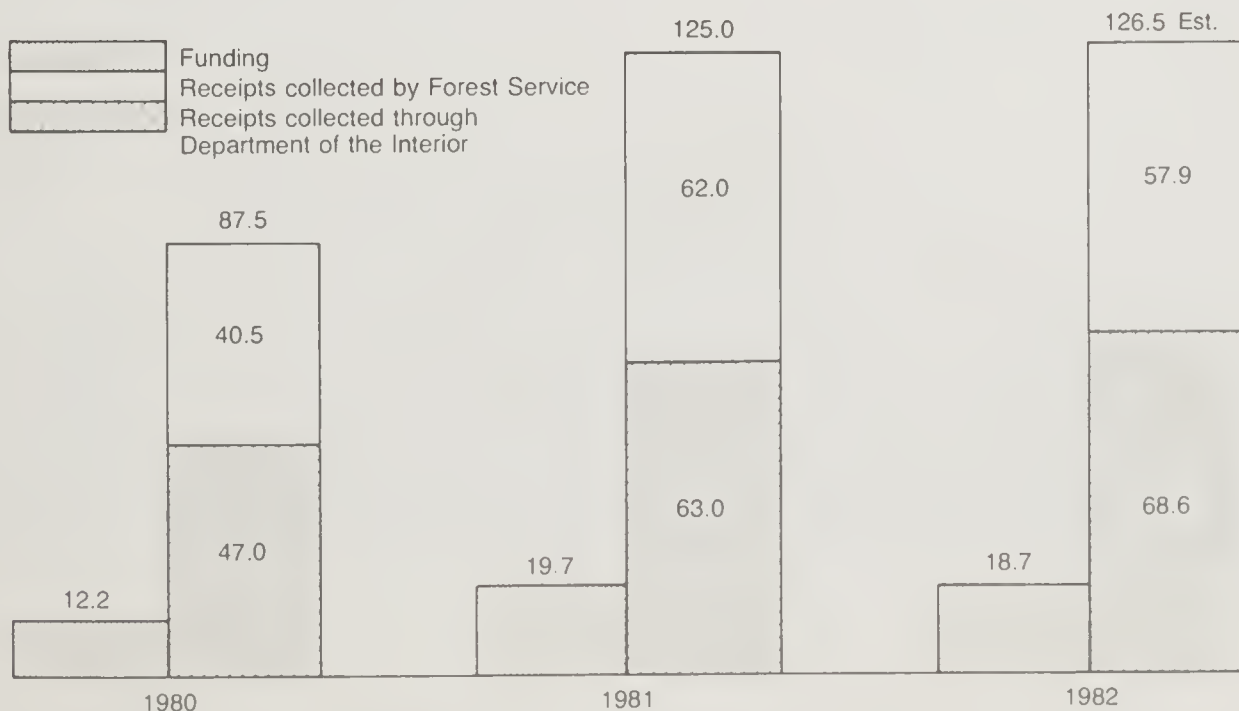


Figure 2. Hardrock mining operation in Montana.

Figure 3

Minerals—Funding and Receipts*

(Million Dollars)



*See Table 55, footnote 5.

resources and planning for transportation and reclamation. This change in the mix of minerals management tasks will lead to increased costs, since administrative activities are generally more complex and costly than processing new lease applications.

Lands

The 1982 land acquisition program accomplished 120 percent of the funded target and 59 percent of the 1982 RPA scheduled activity. The 1982 RPA schedule for land acquisition was to acquire 222,000 acres of non-Federal land. Approximately \$50 million of Land and Water Conservation Funds and \$7 million of Weeks Act Funds were available for this. A total of 130,799 acres was actually acquired at a cost of \$10.9 million. Many acres were acquired through donation. The land acquisition and exchange program provides a means to reduce costs and improve efficiency.

The fiscal year 1982 landline location program accomplished 108 percent of the funded target and 91 percent of the 1982 scheduled activity. The program provided for landline location related to timber sales and minerals, but did not provide for work to locate property lines related to occupancy trespass and boundary disputes.

Land Exchange Program

In 1982, 161,540 acres of non-Federal land were acquired in exchange for 85,460 acres of National Forest System lands (figure 4). These exchanges consolidated National Forest land, easing the task of controlling access and administering various programs. The consolidation resulted in a reduction of more than 1,500 miles of National Forest property lines, which will mean a savings of \$8 million in future landline location costs.

Property was acquired for the Mt. St. Helens National Volcanic Monument, Alpine Lakes Wilderness, Sandia Mountain Wilderness, and other areas eligible for Land and Water Conservation Fund purchases. In these cases, exchanges were deemed a cost-effective alternative to purchase since acquisition costs could be saved. The total value of the properties acquired was nearly \$116 million. Cash payments to equal land values were limited to 1 percent of total value.

Land Purchase and Donation

The budget target for land purchase/donation in 1982 was 108,854 acres. The Forest Service purchased 8,332 acres under the Land and Water Conservation Fund at a cost of \$9.6 million, 873 acres under the Weeks Act for \$762,100 and 1,019 acres under the Receipts and Sisk Acts at a cost

Figure 4

Land Exchange—Funding and Accomplishment

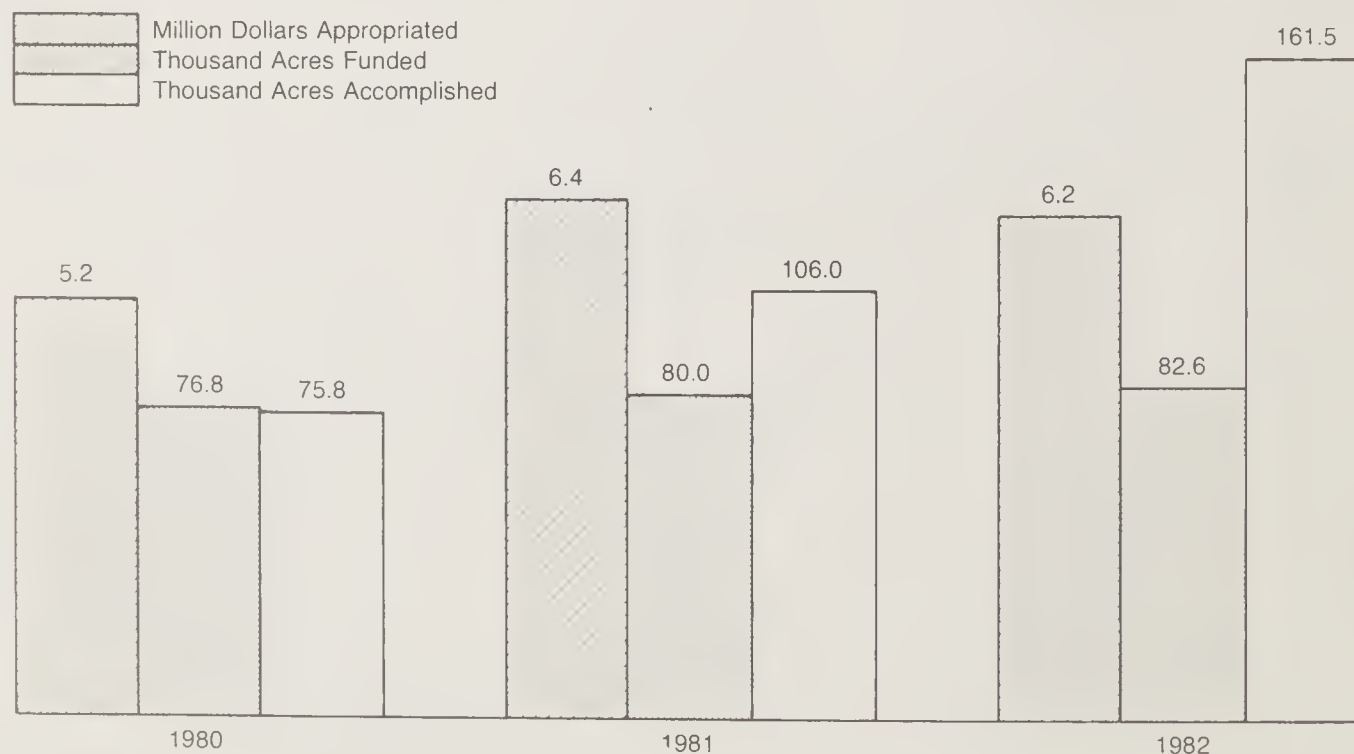


Figure 5

Landline Location
(Miles)

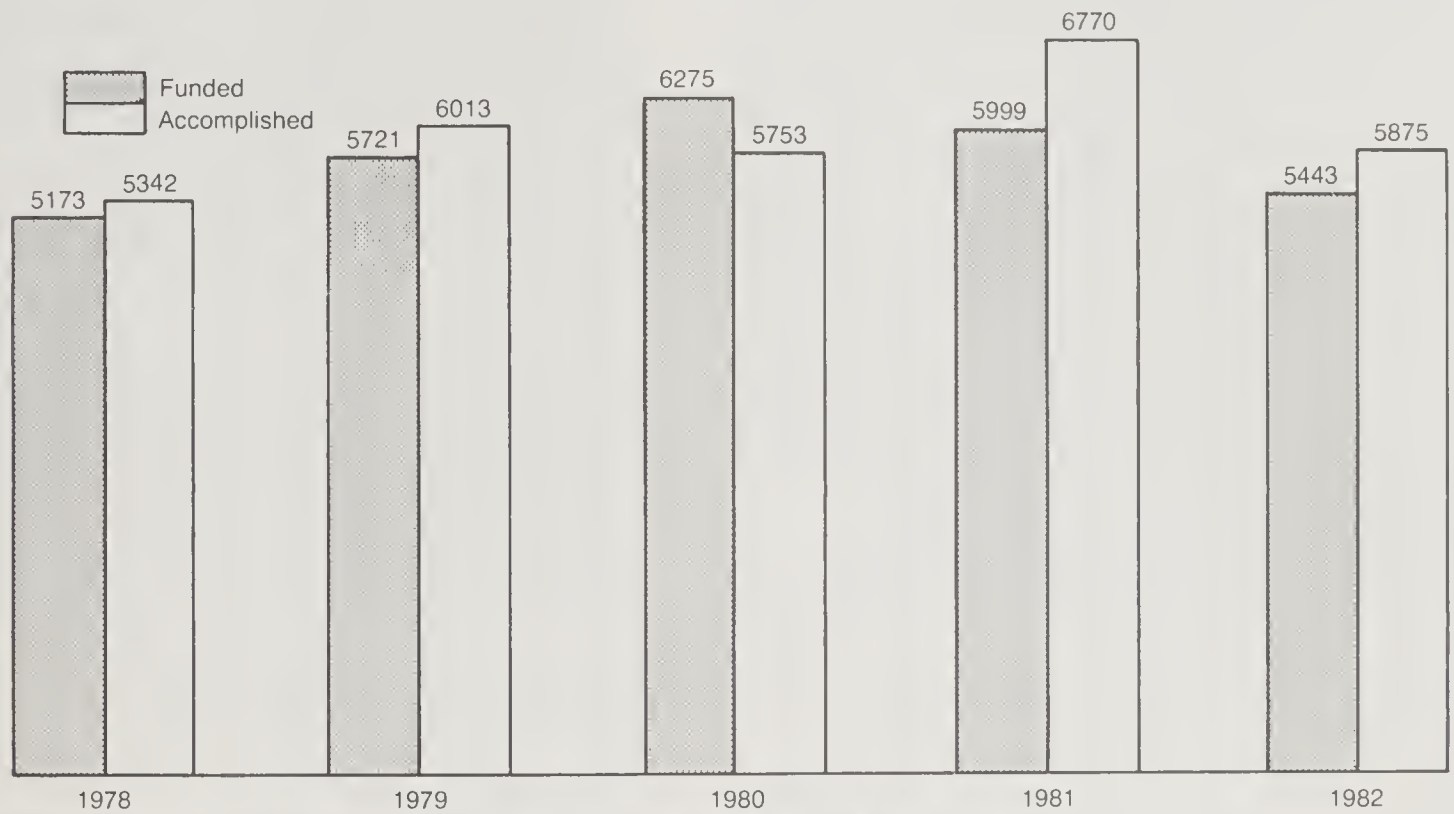


Figure 6. Bull elk on the Valle Vidal tract in New Mexico, donated by the Pennzoil Company.

of \$573,300. In addition, 72 landowners donated a total of 120,575 acres--100,912 acres in fee and 19,663 acres of partial interests. The total purchase/donation program attained 121 percent of the funded target.

Two of the most valuable donations are 100,000 acres in New Mexico from the Pennzoil Corporation and 19,571 acres of mineral interests in Minnesota from the Potlatch Corporation.

Landline Location

In 1982, \$25 million was appropriated to locate about 5,400 miles of property boundaries. A total of 5,875 miles was located, 8 percent more than the target (figure 5). Accomplishments exceeded targets in 1982 primarily because of efficiencies gained through contracting.

Protection

Fire

The RPA recommended program scheduled 306,000 acres for fuel treatment, such as prescribed burning, in 1982. Accomplishment was 683,648 acres of treatment. The achievement of more than twice the target is attributed to changes in Forest Plans, favorable weather for prescribed burning, and technological innovation.

Fire Suppression

The number of detected wildfires remained about the same in fiscal year 1982 for some Regions, but the acreage burned fell to historic lows in all Regions, primarily because of the weather. The South experienced the most active wildfire season of any Region in fiscal year 1982 but it was well below its 5-year average.

Fiscal year 1982 started out with above-normal precipitation and cooler temperatures throughout the country. This situation prevailed through winter, spring, and into early summer. Although forest fuels in California and the Pacific Northwest began drying out, soil moisture content never did reach critically low levels. Summer rainshower activity kept easily ignited fuels such as grass and twigs from drying out. Critical fire weather (high daytime temperatures, low relative humidities, and strong winds) never prevailed for extended periods of time.

Period	No. of Detected Wildfires			Acres Burned
	Lightning	Person-Caused	Total	
1977-81 Average	5,827	6,646	12,473	288,396
1982	3,914	4,621	8,535	60,526

Fuel Management

Fuel management targets were exceeded by 7.6 percent. This can be credited to the unseasonably cool summer, which freed crews from fire suppression and allowed most of the National Forests to continue their work in fuel management and prescribed burning throughout the summer.

The Northern, Intermountain, and Southwestern Regions used unplanned ignitions from lightning storms to reduce forest fuels. The majority of these fires burned less than 5 acres before going out. The largest occurred on the Bitterroot National Forest where it eventually burned 350 acres.

Insects and Diseases

Application of pest prevention and suppression principles through land and resource management activities effectively reduces pest-caused resource damage. National Forest System resource plans are being prepared to project forest pest outbreaks, to estimate potential damage, and to plan appropriate management actions.

Major National Forest System pest management accomplishments beyond those realized through operational forest management activities are:

Detection and evaluation (acres)....126,836,078
Prevention/suppression (acres).....535,370

A more detailed discussion of Forest Pest Management is included on page 29 and 31.

Law Enforcement

The Forest Service has primary responsibilities for law enforcement work directed at protecting natural resources, Federal property, and employees on the National Forests. Timber theft prevention and investigation were important Forest Service law enforcement activities during the year. While the reduced demand for timber for manufactured products was reflected in a reduction in reported thefts of sawtimber, increased demand for fuelwood was reflected in an increase in the illegal removal of National Forest timber for fuelwood.



Figure 7. Interagency group (State Police, County Sheriff, Drug Enforcement Administration, Forest Service) load marijuana from National Forest in Georgia.



Figure 8. Cultivated marijuana loaded for transport to incinerator (Chattahoochee and Oconee National Forests, Georgia).

The Federal Law Enforcement Training Center (FLETC), located at Brunswick, Ga; continued to provide the principal advanced law enforcement training for Forest Service employees. An interagency course on investigating thefts of archaeological artifacts was developed, and another course, investigating wildland arson, was refined. More than 100 Forest Service employees completed training at FLETC during the year.

During 1982, the Forest Service established more effective relationships with the Federal Drug Enforcement Administration, U.S. Department of Justice, and State and local law enforcement agencies responsible for investigation of marijuana cultivation on the National Forests. Through interagency cooperation and coordination, substantial progress was made in eradicating this illegal crop, particularly in California, Oregon, and Arkansas. While comprehensive inventories of cultivated marijuana on the National Forests are unavailable, field reports verified more such activity in 1982 than in 1981.

The major concern related to marijuana is the risk to National Forest visitors, contractors, and Forest Service employees when they encounter those who are tending and/or guarding these lucrative crops. Reducing the use of the National Forests for marijuana production is essential to maintain a safe environment for National Forest visitors.

The Cooperative Law Enforcement Program is designed to compensate local law enforcement agencies for the primary responsibility they have of protecting visitors and their property on the National Forests. During 1982, reimbursable agreements were in effect with 331 State and local law enforcement agencies. Funding was concentrated where large numbers of visitors must receive their principal protection from relatively small, often under staffed, local law enforcement agencies. Substantial reductions in the rate of theft and crime have been achieved in locations where this program increased the law enforcement presence.

RESOURCE MANAGEMENT

Timber

Program Overview

The three major activities and outputs associated with the timber program are total sales offered (expressed as billions of board feet), acres of reforestation, and acres of timber stand improvement (TSI). Accomplishments in relation to fiscal year 1982 funded targets were: 101 percent for timber offered, 103 percent for reforestation, and 114 percent for TSI. Significant accomplishments were made toward meeting the long-term RPA timber management

goals. Ninety-seven percent of the 1982 RPA scheduled output of 11.9 billion board feet of timber was offered for sale, while more than 380,000 of the 463,000 RPA-targeted acres were reforested and 88 percent of the timber stand improvement program was accomplished. (See Tables 1, and 9 through 16 for a presentation of the timber program.)

Timber on National Forest System lands is managed to produce a continuous supply of wood products to serve America's many demands. Logs for lumber and plywood, pulpwood for paper, fuelwood, posts and poles, and Christmas trees are a few of the many products of the National Forest timber resource. The production of these commodities requires a variety of activities such as thinning trees to promote growth, replanting cutover areas to assure new stands of trees, and pruning to increase lumber quality.

National Forests annually provide about 20 percent of the total timber harvested in the United States. This compares to about 30 percent from forest industry lands and 50 percent from other private lands. This total harvest for both softwoods and hardwoods includes all timber products, such as sawtimber and pulpwood.

National Forests have the largest supply of standing sawtimber in the Nation, estimated at

nearly 1.1 trillion board feet. This is about 41 percent of the national total. Nonindustrial private forest lands account for one-third of the total.

Demand in 1982

A key determinant of the demand for many timber products is residential construction activity. As the Nation's most important market for softwood lumber and plywood, the housing industry is also a major user of many other timber products such as hardwood, plywood, particleboard, and insulation board. Not only is it a large direct consumer of wood, but it provides the stimulus for homeowner purchase of many wood-related manufactured goods including furniture and veneers.

New housing starts, which in recent years have accounted for more than 40 percent of the U.S. lumber and plywood consumption, have shown a continued downward trend since June 1979. This steady 3-year decline has been the most severe and deepest since 1946. The number of housing starts for 1982 is projected ^{4/} to remain below the 1.1 million starts for 1981. While there has been some indication of a moderation in interest rates, the total number of building permits has risen only slightly over the 1981 levels.



Figure 9. Loading ponderosa pine logs, Sequoia National Forest, California.

Figure 10

Timber Offered, Sold and Harvested (Billion Board Feet)



In fiscal year 1982 nonresidential construction, another major consumer of lumber products, declined slightly from the 1981 level. As a result of these two indicators, total lumber consumption is expected ^{4/} to continue to be below the 1981 levels and to show little improvement until early 1983.

The overall consumption of wood products has shown some gains after having dropped 8.6 percent below the 1980 level. The 1982 level is expected ^{4/} to be about the same as 1981 with some indications that increased demands will be sustained in early 1983. Production in the furniture and fixtures industry, an important market for hardwood lumber, plywood, particleboard, and hardboard, has been following a slowly rising trend since January 1982 and is expected ^{4/} to exceed the 1981 level.

The total harvest level for 1982 was down 16 percent from 1981, while the total value of the volume harvested was 53 percent lower than in 1981 (figure 10). This is a strong indicator of

how much the value of lumber has been depressed. The harvest level from the National Forests for 1982 was the lowest since 1958.

Despite a continued depression in the lumber market, interest in National Forest timber sales has remained relatively high. A total of 10.0 billion board feet was sold (90 percent of offered volume) by the Forest Service in 1982 at a total value of \$614 million. In comparison, timber sales in 1981 were 11.5 billion board feet at a value of \$1.8 billion. Figure 11 and table 10 show the volume of timber offered, sold, and harvested in each Forest Service Region during 1982. These figures reflect the current economic conditions in the lumber industry.

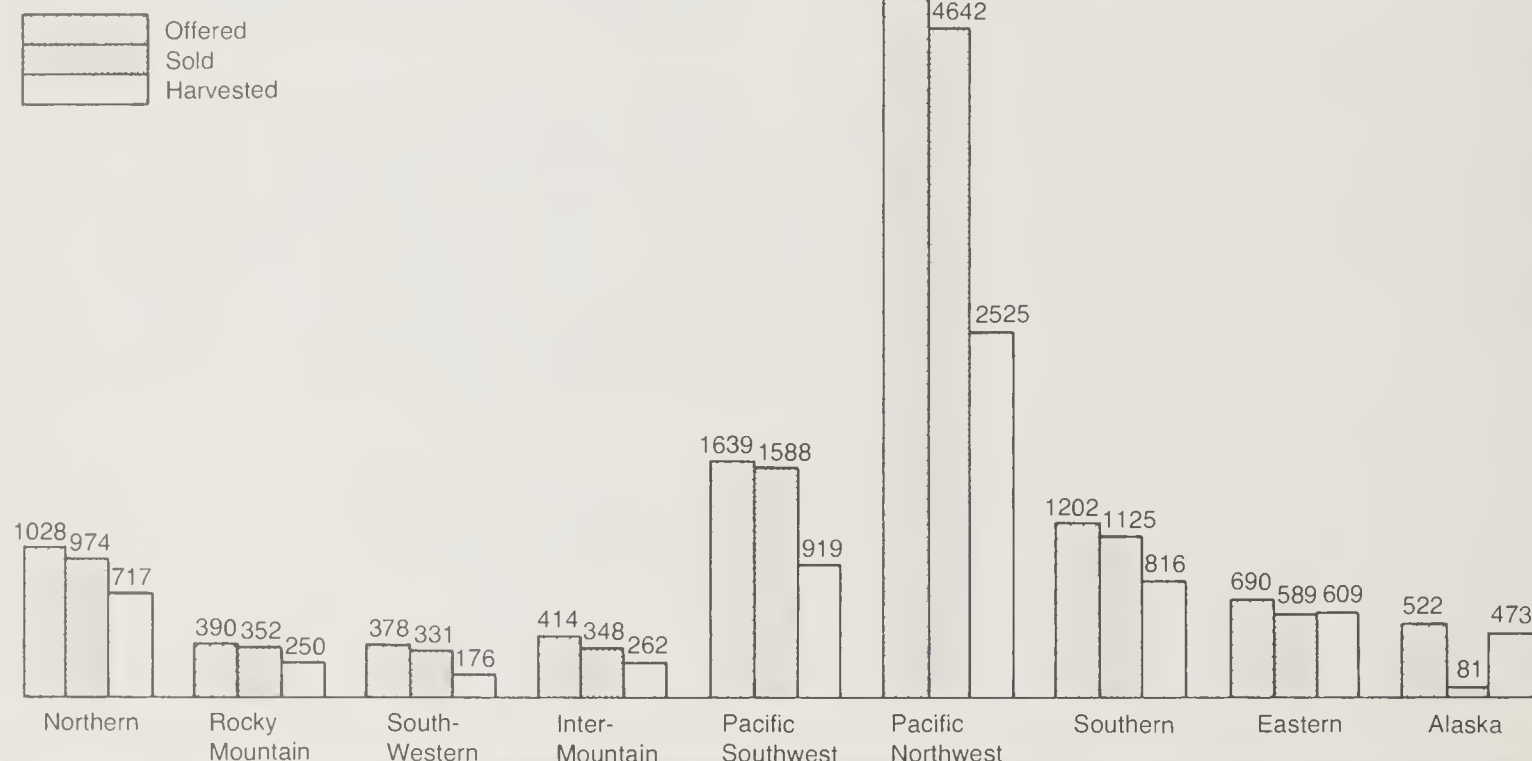
Stumpage rates, the value of timber before it is harvested, showed a dramatic drop in fiscal year 1982. The average national stumpage rate per thousand board feet for volume sold was \$121 in 1978, \$173 in 1979, \$172 in 1980, \$154 in 1981, and \$61 in 1982. The value of harvest receipts has shown a similar change from 1981 when the average national value was \$90 as compared to \$55 in 1982. These values include only the returns to the Treasury and the deposits retained for work to be done. The value of roads built by the purchaser is not included in these figures.

^{4/} These figures are projected, collected, and reported on a calendar quarter and calendar year basis. Projected and estimated figures are used since final figures are not yet available for the total fiscal year.

Figure 11

Timber Offered, Sold and Harvested by Region

(Million Board Feet)



The continued relatively high level of sales indicates that the timber industry considers the National Forest timber, which is under contract, a reasonable hedge against any rapid increase in consumer demand should the interest rates on long-term loans fall below 12 percent. The rate of road construction by timber operators in 1982 remained relatively high; this makes the timber readily available on short notice.

Since 1978, the volume of uncut timber has grown 28 percent. During this period industry began to build inventories of uncut timber to facilitate long term scheduling and to guarantee a supply of raw material. The Forest Service also began offering timber under contracts that allowed more time for harvest. Since 1977, a large proportion of sales has allowed 3 to 5 years for harvest, compared to the previously typical 2 to 4 years. Because of a reduction in the value of lumber products, it is estimated that more than 60 percent of the uncut volume under contract is uneconomical to cut.

The lack of demand has driven the selling prices for lumber to the lowest levels in the last 10 years. Among the reasons that contributed to the excessively high bids were: increasing demands for housing since the 1940's, the relatively stable amount of timber available from National Forest lands, inflation, and the uncertainty as

to amount of National Forest lands that would be available for future timber harvest. This has caused timber operators to seek relief through Congress, and several proposals, such as contract cancellation, are under discussion. The bids for this timber now generally exceed the value of the final product.

The Forest Service in 1980 and 1981 granted extensions of 1 and 2 years so that timber operators could have more time to complete the harvest of their existing sales. These sales will begin to expire in 1983, with most of them expiring in 1984. The rest are being held until some type of relief is provided, either in the form of more extensions or legislation. Without some sort of relief, many timber producers will soon have to decide whether to hold on to various sales or to let them expire and default.

Early in 1982, the Forest Service initiated several measures to discourage purchasers from buying and holding large volumes of timber under contract. For sales made after April 1982, the Forest Service now requires a higher advance cash deposit to be made by the successful bidder within 30 days of the sale award. A system of discounting bid prices to encourage early fulfilling of the contract has been established. Also, changes have been made in performance bond requirements, payment schedules during the life

of the sale, and arrangements for payments in case of default.

At the end of fiscal year 1982, 36.1 billion board feet of uncut (excluding long-term sales) National Forest timber was under contract.

Nearly half of this volume is located in the Pacific Northwest (figure 12 and table 13). With an annual sales program of about 11 billion board feet, this represents approximately a 3 1/2-year backlog of uncut timber. The contract value as of October 1, 1982, for the uncut volume is \$4.5 billion.

Timber Sale Preparation, Offer and Harvest

In the 1982 fiscal year, Congress funded the Forest Service to prepare 11.4 billion board feet and offer for sale 11 billion board feet. The actual volume prepared was 11.4 billion board feet, with 11.1 billion board feet actually being offered. The total offered is 1.1 billion board feet less than the volume prepared and offered in 1981 (figure 13).

Average costs for preparation did not increase between 1981 and 1982, but the value received for the standing timber was approximately half as much as in 1982.

Sales in early 1982 were specifically designed to be short in duration, small in size, and low in price, in order to provide industry with timber to meet the current market situation.

In 1982 6.7 billion board feet were harvested, compared to 8.0 billion board feet in 1981.

Salvage Sale Program

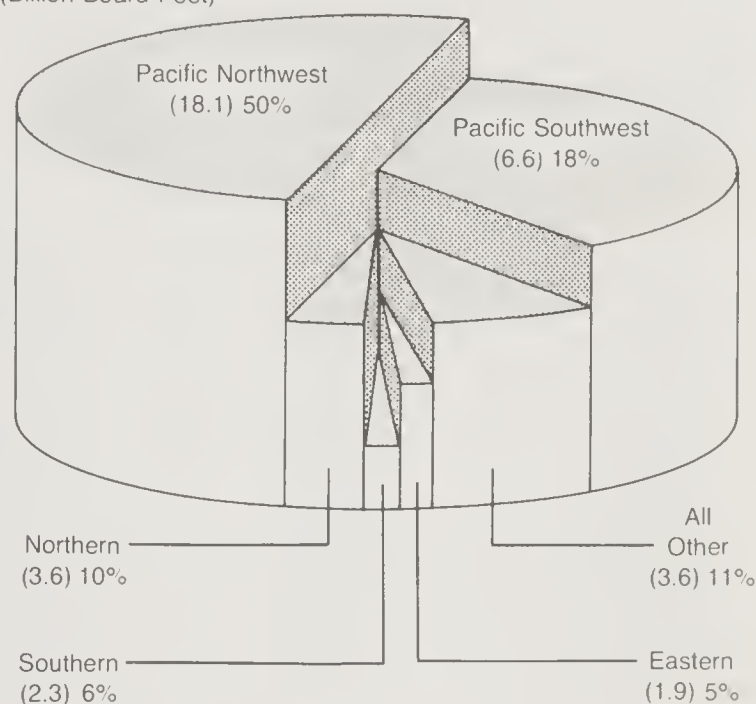
In fiscal year 1982, more than 1.6 billion board feet of salvageable timber were sold. About 50 percent of this amount was sold under the special salvage program.

This program, authorized under the National Forest Management Act of 1976, allows the Forest Service to use receipts from salvage sales to cover the cost of preparing and administering sales of insect-infested, dead, damaged, or down timber, including necessary engineering work for roads.

Approximately 130 million board feet of this total salvageable volume was sold to small timber operators with fewer than 25 employees. This is about 5 percent higher than the 1982 program level. The Mount St. Helens sawtimber salvage volume made up 351 million board feet of this total program.

Figure 12

Uncut Timber Volume Under Contract by Region—Fiscal Year 1982 (Billion Board Feet)



Total 1982—36.1 billion board feet

Receipts

The 1982 receipts from timber purchasers totaled \$365.0 million, about 50 percent of the total receipts for 1981 (figure 14 and table 15). These receipts include returns to the Treasury, deposits retained for use in work done by the Forest Service on timber sale areas, and the value of roads built by purchasers in lieu of cash payments. Timber receipts are the largest single source of revenue of any U.S. Department of Agriculture program.

Timber Sales Comparisons

Section 6 of the Resources Planning Act requires the identification of a representative sample of advertised timber sales sold below the estimated expenditures for such sales (table 16).

The principal reasons for selling timber below cost were to encourage utilization of damaged and low profit margin timber, to improve growth by meeting the silvicultural needs of individual stands of timber, or to satisfy the needs of local communities that are dependent on National Forest timber sales.

Figure 13

Timber Offered
(Billion Board Feet)

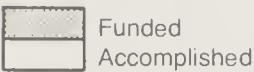
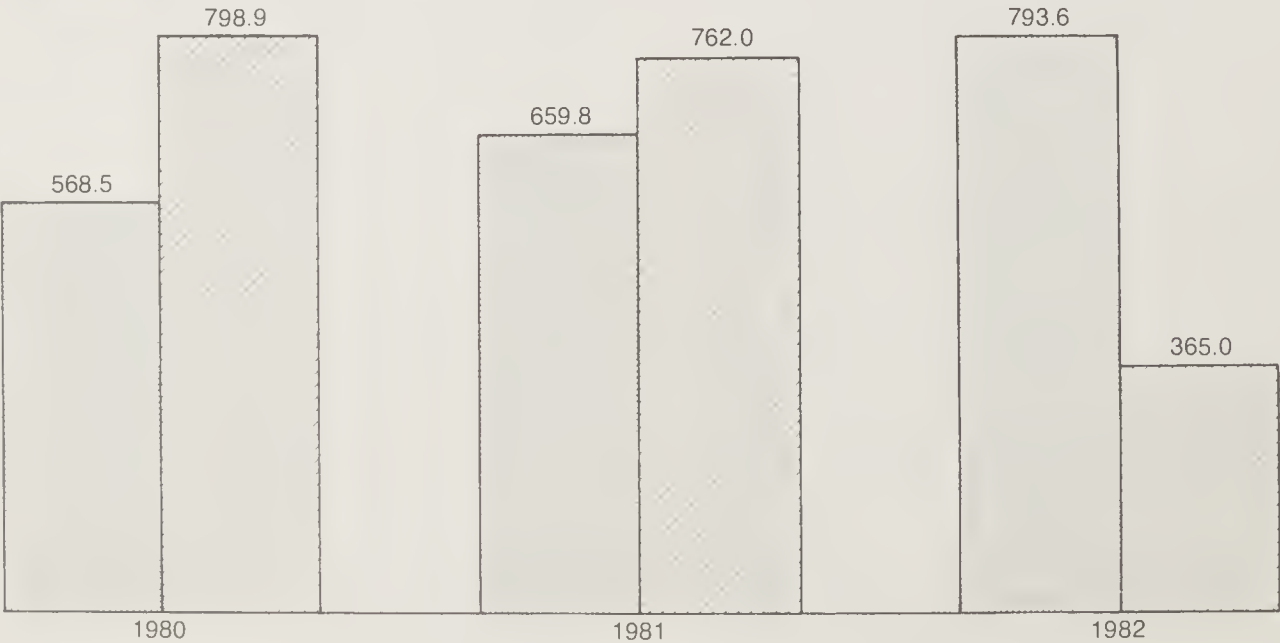
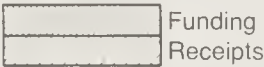


Figure 14

Timber Funding and Receipts*
(Million Dollars)



*Excludes Timber Purchaser Roads Constructed by the Forest Service, See Tables 14, 15 and 55.

Fuelwood

Interest continues to increase in the Forest Service firewood program. This program allows people to obtain permits to cut timber for their personal use as firewood. More than 860,000 permittees removed over 4.7 million cords of fuelwood valued at about \$7.5 million from National Forest System land. This is a 5-percent increase over the 1981 level and will provide the heating equivalent of about 16.2 million barrels of fuel oil.

Silvicultural Examinations

Silvicultural examinations and site-specific prescriptions provide data on which to base management decisions concerning timber sale activities, reforestation, and stand improvement programs. Both timber resource inventory and silvicultural examination results are essential in providing data used in the land management planning process. In 1982, the examination program was funded to review 6.8 million acres, with work actually completed on 7.3 million acres. This increase was because of work that was begun in fiscal year 1980 but not completed until 1982.

Reforestation

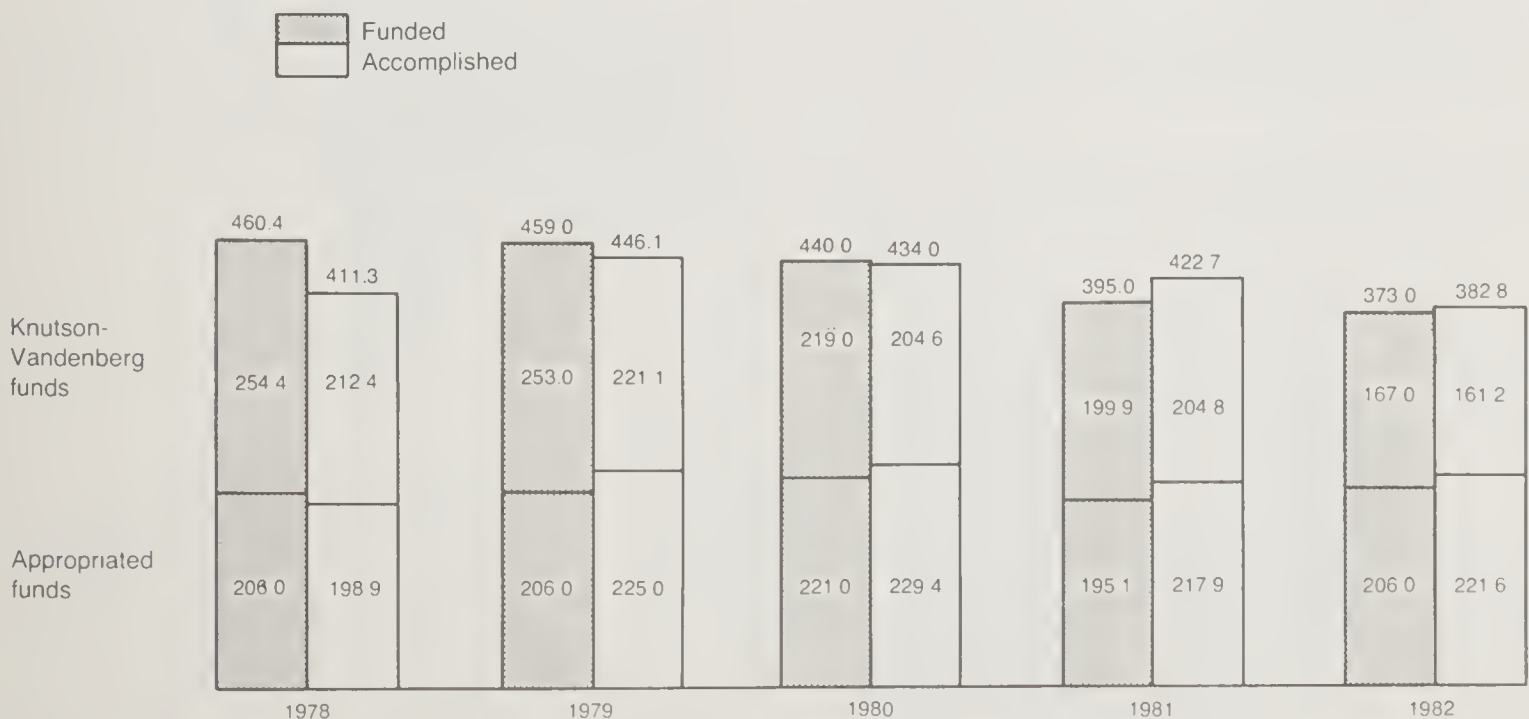
More than 380,000 acres of National Forest lands were reforested in 1982. This is about 20 percent of the total reforestation on all lands in the United States and about 83 percent of the 1982 scheduled RPA Program for the National Forests. About 220,000 acres were reforested with appropriated funds and 160,000 acres with money set aside from timber sales under the Knutson-Vandenburg Act (K-V funds). (figure 15 and table 17.)

About 400,000 acres each year require reforestation as a result of timber harvest, natural disasters such as fire, storms, insects, and diseases, and reforestation failures. At the close of fiscal year 1982, about 1 million acres were in need of reforesting. The backlog, which Congress mandated be accomplished by 1985, is now about 0.3 million acres.

The average cost per acre of reforestation in fiscal year 1982 was \$300, an increase of about 32 percent since 1979. This is due primarily to higher costs of site preparation, animal control, and planting on the more difficult and less accessible locations, many of which are backlog areas.

Figure 15

Reforestation (Thousand Acres)



Timber Stand Improvement

Timber Stand Improvement (TSI), which is the application of noncommercial treatments to stands to improve growth and tree quality, was applied to about 360,000 acres. This reflects approximately 25 percent of the TSI accomplished on all lands in the United States. More than 240,000 acres were treated with appropriated funds and 120,000 acres with K-V funds (figure 16 and table 20). The potential yield of timber is decreased when activities, such as removing defective trees or trees competing for limited nutrients, are not accomplished when needed.

As of October 1, 1982, an estimated 1.7 million acres needed TSI treatment to improve the growth condition of timber stands. This reflects the number of acres of new stands being created by reforestation, many of which will have to be released from competing vegetation and thinned to maintain a healthy, vigorous stand of trees. The average cost per acre of TSI was \$150, an 11-percent increase from 1981. This increase is the result of the reduction in the size of areas being treated (and consequently loss in the economies of scale), the change of methods in treatment work, and the large number of areas that have more stems per acre to be removed.

The relationship of the TSI program and full potential yield of timber from the National Forests is critical. Treatments can increase timber production by as much as 50 percent over the life of a stand by capturing growth that would otherwise be lost.

Tables 17 through 24 show detailed information on reforestation and TSI needs and accomplishments for fiscal year 1982.

Recreation

The Forest Service's goal in managing recreation on National Forest System lands is to emphasize opportunities to experience nature.

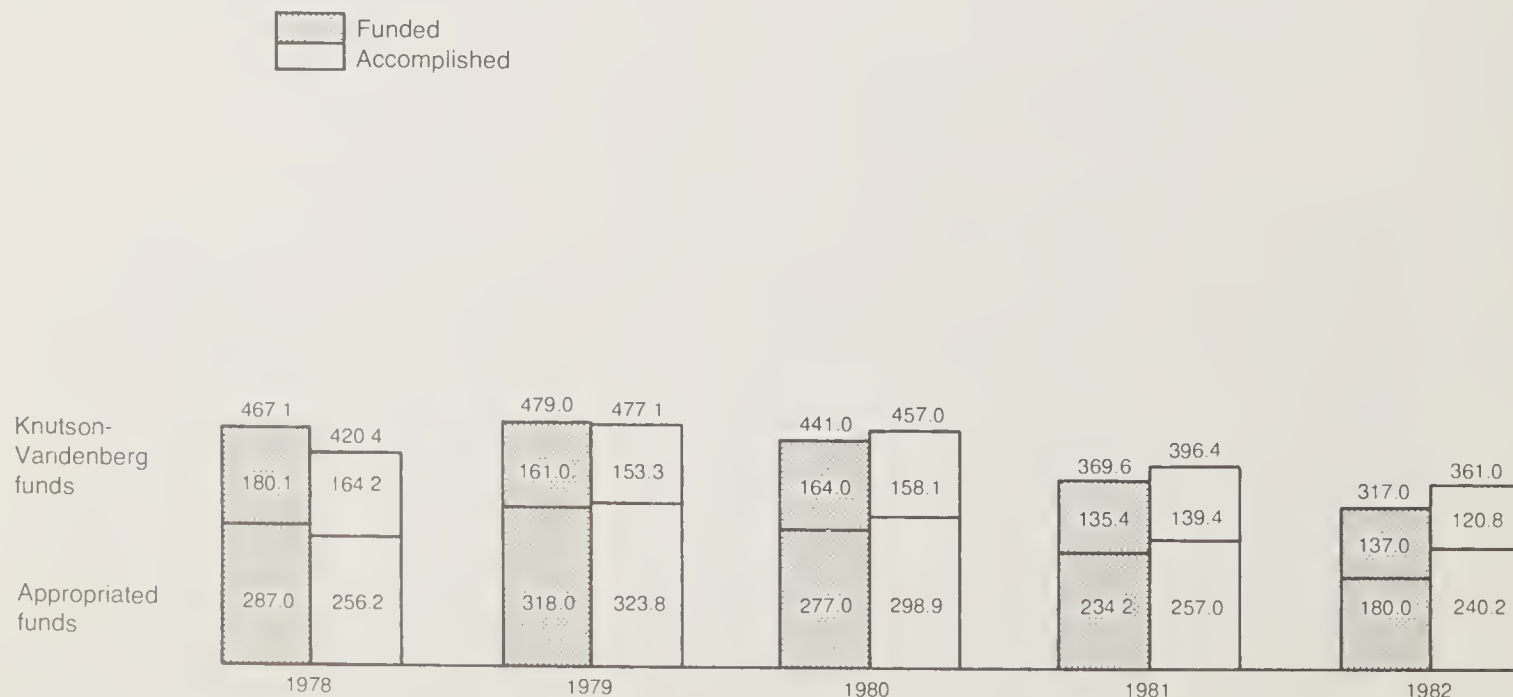
Recreation Use

The level of recreation use recorded at developed sites in 1982 was 96 percent of the RPA anticipated demand. These sites had more than 84.3 million recreation visitor days (RVD's) of use. In the undeveloped areas the recorded recreation use exceeded the 1982 RPA anticipated demand by more than 6 million visitor days, showing the continued popularity of these recreation opportunities. The 366 miles of trails constructed and reconstructed resulted in achieving 115 percent of the funded target and 16 percent of the 1982 RPA scheduled output.

Figure 16

Timber Stand Improvement

(Thousand Acres)



More recreation occurs on National Forest System lands than on any other Federal land system. Federal lands received 544 million visitor days of use in 1981, the most recent data available from all agencies, with 43 percent provided by the National Forests and National Grasslands that make up the NFS (figure 18).

In fiscal year 1982, 233.5 million recreation visitor days occurred on National Forest System lands, almost unchanged from the previous year. This is equivalent to everyone in the United States visiting a National Forest for one 12-hour day. In the past 5 years, recreation use on National Forest System lands has increased 7 percent. National Forest recreation varies from camping at constructed facilities to backpacking in primitive settings (tables 25 through 30).

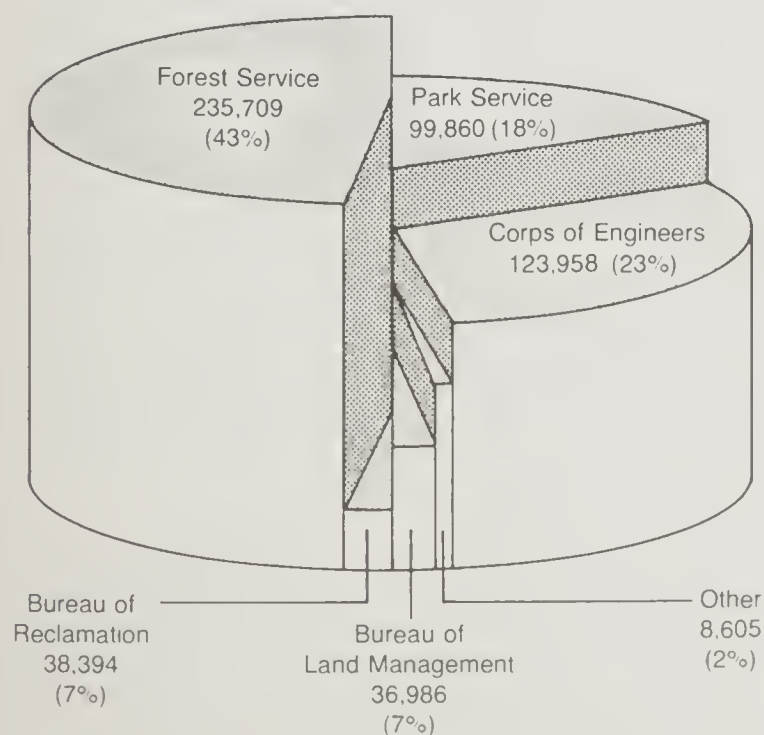
Of the total use in 1982, 11.2 million RVD's occurred in wilderness and primitive areas and 222.2 million on other National Forest System lands.

Use of facilities was down less than 1 percent from 1981, with 84 million RVD's. It is estimated that two-thirds of this use occurred at Forest Service-operated facilities and one-third at facilities operated under permit on National Forest System land.

Figure 17

1981 Recreation Visitor Days by Federal Agency

(Thousand RVD's)



Total Recreation Visitor Days—543,512 Thousand

A combination of factors account for the increased use of developed sites over the last 10 years. Some of this increase comes from increased utilization of existing capacity; some also comes from increased capacity. This increased capacity includes many facilities constructed by other agencies and turned over to the Forest Service, i.e., Corps of Engineers, Bureau of Reclamation, and private utilities such as Pacific Gas and Electric. A significant number of facilities have also been constructed with Human Resource programs such as Young Adult Conservation Corps (YACC), Youth Conservation Corps (YCC), Job Corps, and Volunteers.

The private sector also has contributed towards increased capacity. Ski area capacity has increased by 55,659 persons at one time (PAOT) in the last 10 years. RVD use at winter sports sites has more than doubled in this same period, from 6 million to 14 million RVD's.

Receipts

Fees were increased to bring them more in line with operation and maintenance costs and to reduce competition with the private sector.

Receipts in 1982 totaled \$25.4 million, whereas receipts in 1981 totaled \$19.4 million, an increase of more than 30 percent in 1 year (figure 18).

This is a significant increase in total receipts when it is noted that total recreation actually decreased by 2.2 million user days from 1981. The total effect of the increase in receipts and the slight decline in use has resulted in an increase from 21 cents to 28 cents being returned to the Treasury for every dollar spent, a 33 percent increase.

User fees for Forest Service facilities accounted for \$11.2 million, while \$14.1 million came from special uses, primarily ski areas and recreation residences.

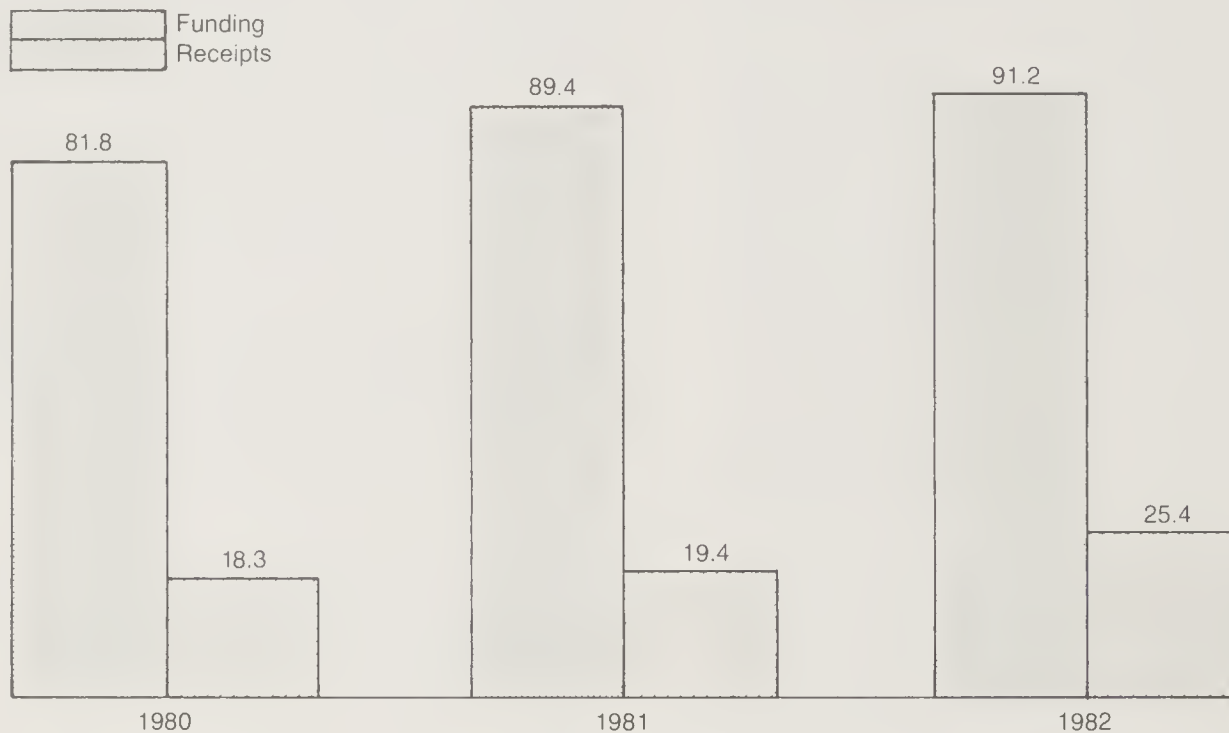
Rates are rapidly nearing comparability with the private sector and most facilities at which fees can be charged under current legislation have been placed on the fee system. The agency emphasized increasing the collection of fees in 1981 and 1982.

In 1981, the median fee for a National Forest System campsite that charged for overnight camping was \$2.35. In 1982, the median increased by 47 percent to \$3.45. In 1982, an additional 136 campgrounds were placed on the fee system, bringing the total to 1,810. Since the demand for these recreation opportunities has been shown

Figure 18

Recreation—Funding and Receipts

(Million Dollars)



to be very inelastic, within the experienced price range, the increase in fees has not caused any significant decrease in recreation user days.

Trails

Trails are essential for both managing and protecting the National Forests and Grasslands and meeting the demand of recreationists. Access for administration as well as recreation is provided to vast areas by the trail system.

The RPA target for trail construction and reconstruction was 2,331 miles. Fiscal year 1982 appropriations funded 318 miles.

The accomplishment was 365 miles, 15 percent above the funded level, yet only 16 percent of RPA. The increase over the funded level was primarily because of lower bids than anticipated from private contractors. In addition, persons involved in human resource programs constructed or reconstructed 416 miles; including 175 miles done by volunteers.

Recreation Facility Management

Heavy demand for use of the National Forests led to construction of recreation facilities as much for the protection of the environment as for the convenience of the user. Only one-quarter of the

total recreation use occurs at Forest Service-operated facilities. Those operated by the private sector or other public agencies on National Forest System land accommodated an additional 12 percent. Fully two-thirds of the recreation use of the National Forests is away from constructed recreation facilities, occurring throughout the general forest area. This further emphasizes the importance of the trail system.

In 1982, 41 percent of the recreation sites opened for public use were operated at the full service level. "Service level" describes the level of operation and maintenance of the National Forest recreation facilities and areas. When established standards are met, management is at Full Service Level (FSL). The bulk of funding expended to achieve FSL management goes to maintain facilities at a level that does not allow accelerated deterioration.

When recreation facilities or areas are opened and managed for public use, but are operated at less than identified standards, operation and maintenance is at Reduced Service Level (RSL). The effect of operating at RSL is deterioration of the site and facilities, and a shortening of the time when the facility should be replaced to serve the public.

Figure 19

Recreation Facilities Operated at Standard Level of Maintenance Compared to Accumulating Deferred Maintenance



It has been necessary to shift from FSL to RSL management and shorten the length of the use season to help reduce the Federal deficit during these difficult economic times. Maintenance was decreased to reduce expenditures and the percentage of facilities operated at FSL went from 65 percent in 1981 to 41 percent in 1982.

In 1979, 74 percent of the opened facilities were managed at FSL. Resource treatment and maintenance that has been deferred on recreation facilities has exceeded \$200 million in each of the past 3 years (figure 19).

The inventory of recreation facilities includes areas improved by external agencies on National Forest System lands. These include sites developed by the Army Corps of Engineers and transferred to the Forest Service.

In 1982, the Forest Service acquired 11 recreational developments from the Corps of Engineers, bringing the total to 14 acquired since 1978. Their total value is \$21.2 million. These facilities are camping, picnicking, and boating sites located on Corps of Engineers reservoir projects in the Southeast.

Recreation Site Construction

More than 90 percent of the \$5.5 million allotted for recreation site construction was used to rehabilitate existing facilities. This was necessary to protect visitor health and safety as well as the natural resources of the area. The other 10 percent was used for constructing new facilities.

Cultural Resource Management

The Historic Preservation Act of 1966 directs that significant properties be protected during ground-disturbing activities. Appropriated funds were used to inventory cultural resources on more than 3 million acres of National Forest System lands. More than 4,500 cultural properties were identified. Forty were listed on the National Register of Historic Places and an additional 160 were determined by the National Register to be eligible for listing.

Wild and Scenic Rivers

No rivers on National Forest System lands were designated by Congress for the Wild and Scenic River System during 1982. Based on completed studies, the President forwarded a comprehensive bill to Congress recommending the addition of

eight rivers to the system. These are Los Pinos, Conejos, Elk, and Piedra in Colorado, Clarks Fork and Snake in Wyoming, Verde in Arizona, and Au Sable in Minnesota.

Mount St. Helens National Volcanic Monument

During fiscal year 1982, the Forest Service carried out numerous administrative duties involving Mount St. Helens. Emergency volcano monitoring and coordination continued with county, State, and Federal agencies.

On October 16, 1981, the Chief of the Forest Service designated a National Volcanic Area of 84,710 acres. The Mount St. Helens Land Management Plan was implemented to provide for safe public use and to protect the unique and special resources of the area.

Public Law 97-243 was enacted on August 26, 1982, designating about 110,000 acres as a National Volcanic Monument to be administered by the Forest Service. The legislation provides for administering the area, extending the Gifford Pinchot National Forest boundary, acquiring certain private lands, and establishing a scientific advisory board, and authorizes the appropriation of up to \$12 million.

From February 5 to September 30, 1982, more than 750,000 individuals stopped at the visitor center, portals, and the monument.

The Forest Service is acting to acquire about 33,000 acres of non-Federal lands by exchange. Late in the year, the Forest Service and the Corps of Engineers cooperated to reduce the water volume in Spirit Lake to prevent further flooding and debris movement in the North Fork Toutle River.

Wilderness

To date, Congress has designated some 25.1 million acres of wilderness areas. This level is about 14 million acres short of the 1982 RPA scheduled program of 33 million acres.

The objective of wilderness management is to provide for use and protection of wilderness resources. Solitude, natural conditions, genetic pools, ecological and geological characteristics, and other features of scientific, educational, or historical value are components of the wilderness resource.

In 1982 the 25.2 million acres of wilderness accounted for 11.2 million RVD's of use. Most Wilderness use continues to come from the 54



Figure 20. Rafting on the Middle Fork Salmon River, Salmon National Forest, Idaho.

million acres of Wilderness originally designated in 1964 and not from the acres added since that time.

During fiscal year 1982, Congress made no additions to the National Wilderness Preservation System from the National Forest System land base. The 25.1 million acres the Forest Service administers is 13 percent of total National Forest System lands.

The Nineteenth Annual Wilderness Report (December 31, 1982), required by Congress, provides detailed wilderness data.

Wilderness Legislation

During fiscal year 1982, 41 wilderness bills were introduced in Congress; 4 passed the House and 3 passed the Senate. None were enacted into law during fiscal year 1982. The Administration testified at a number of hearings on wilderness proposals.

Wildlife and Fish

The wildlife and fish program accomplished 80 percent of the funded improvement target and 52 percent of the 1982 RPA scheduled activity. Of the 579,200 acres of habitat improvement identified as the wildlife and fish RPA scheduled activity for 1982, 300,000 acres were actually improved. The wildlife and fish program has been shifted from a focus on direct habitat improvement to providing support to other activities, including timber, range, and mining. The program accounted for 71,946 acres of habitat improvement funded by the Knutson-Vandenberg Act and 374,607 acres of habitat benefited by support to many other National Forest System activities. A major portion of the fish habitat improvement work accomplished in California, Oregon, and Washington, and all work in Alaska contributed toward the 1982 scheduled activity for the anadromous fish program. The approximately \$4 million expended in this area supported stream habitat improvement projects including in-stream structures, such as fish ladders, and lake fertilization for Coho Salmon in Alaska.

Wildlife and Fish Resource Use

As private land continues to be converted to agricultural, industrial, and urban uses, the National Forests will become increasingly more important habitat for wildlife and fish species and for wildlife- and fish-oriented recreation. The wildlife and fish resource accounted for 34.1 million user days for hunters, fishermen, bird watchers, and others. ^{5/} This represents about 15 percent of all recreation on National Forests. Use in 1982 was 2.7 percent less than in 1981.

A close working relationship with State wildlife and fish agencies is maintained since States have the responsibility to manage animal populations, while the Forest Service manages the habitat.

Wildlife and fish programs on National Forest System lands are guided by the RPA Program and comprehensive plans developed in cooperation with the States. Goals in the plans are based on public demand, the required habitat improvements, costs, and net benefits.

Wildlife and Fish Habitat Improvement

Habitat improvements that either increased the capability of the land to support fish and wildlife or mitigated losses from other resource programs were accomplished on 300,000 acres, 80 percent of the funded program.

Habitats were improved for wildlife and fish in public demand such as deer, elk, grouse, waterfowl, salmon, trout, and bass. Results include:

--Wetland improvement for waterfowl in the Lake States, the Southwest, and California.

--Prescribed burning for mule deer and elk in the West and white-tailed deer in the East and the South.

--Fish ladders for salmon in the Pacific Northwest and Alaska.

Threatened, Endangered, and Sensitive Species

The Forest Service carried out management programs for 68 plant and animal species that are federally listed as threatened or endangered.

Results of programs to manage these species include:

--Revised livestock grazing plans to protect grizzly bears and their habitat in Idaho.

--Land purchases, road and trail relocation, human access restrictions, and campground relocations to protect California condors and their habitat.

--Several successful peregrine falcon reintroductions in California, Colorado, Arizona, and New Mexico.

^{5/} These are included as Recreation Visitor Days (RVD's) in the recreation use figures.

--Road design changes and closures to protect gray wolf and grizzly bear habitat in Montana.

The Forest Service's sensitive species program provides management to avoid declining populations of plants and animals that could become threatened or endangered. Examples include:

--Special timber management for spotted owls in California, Oregon, and Washington and for the woodland caribou in northern Idaho.

--Revised grazing plans to protect a very rare milk vetch on Heliotrope Mountain in Utah.

Support to Other Resource Programs

Wildlife and fish habitat needs are considered in other resource programs, such as mining and timber. For example, timber sales are planned to eliminate negative effects on grizzly bear habitat by requiring seasonal road closures and by building roads that discourage public use. The same sale could be planned to improve elk habitat by harvesting in locations to provide feed close to cover. Timber management programs are important to help meet habitat improvement objectives for species such as deer, elk, turkey, and squirrels.

Range

The range program accomplished 101 percent of the funded target and 100 percent of the 1982 RPA scheduled output. The 1982 RPA scheduled output for range was to provide 9.9 million animal unit months of livestock grazing. (An animal unit month is the amount of forage needed to support one cow, one horse, or five sheep for 1 month.)

This output was met with an appropriation of \$33.8 million. Construction of structural improvements, such as fences, water developments, and pipelines, affected 2,600,000 acres, 380 percent of the RPA-programmed acres in 1982. Non-structural work, such as seeding, fertilizing, and mechanical or chemical treatment of vegetation, was completed on 200,000 acres, 65 percent of the RPA scheduled activity.

The range resource on National Forest System lands is managed to maintain land productivity for grazing and other resource uses. The manner and degree to which vegetative resources are used affects all resources. Water quantity and quality, soil productivity and stability, wildlife habitat, forage for livestock, wild horses and burros, and esthetics are all irrevocably tied to vegetation.

Grazing permittees depend upon National Forest System forage to complement livestock ranching

operations upon their privately owned lands. In addition to administering 15,300 grazing permits, 440 wild horses and burros were captured and offered for adoption in order to help balance range use with carrying capacity. In cooperation with local weed control districts, 20,700 acres of Forest Service lands infested with noxious weeds were treated to prevent infestation of neighboring private agricultural lands.

Range Condition

An assessment made in 1977 of National Forest System lands shows that 68 percent of the ranges are in satisfactory condition and 32 percent are not (figure 21). Vegetation and soil are considered in determining overall range condition.

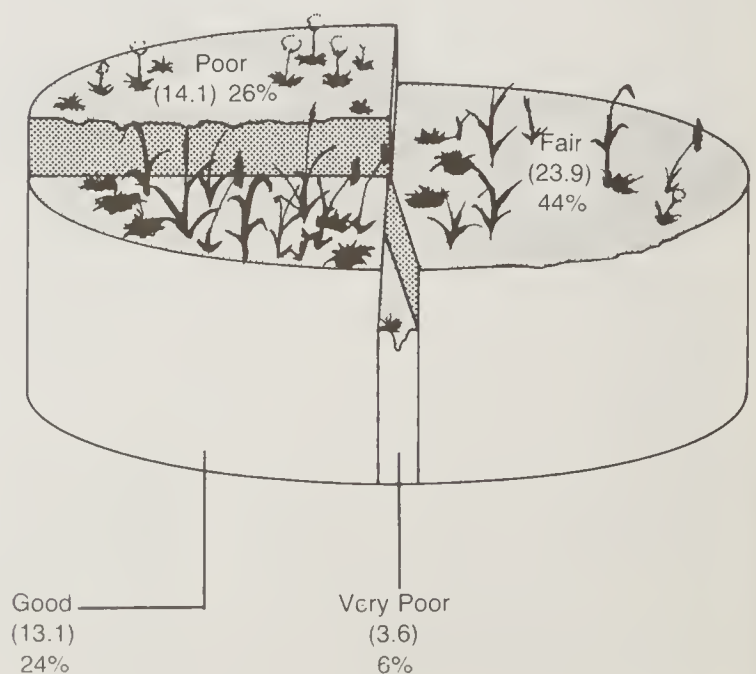
The overall trends in range condition are toward improvement, although there are still unsatisfactory conditions that must be reversed to protect soil and vegetation resources.

Grazing Program

The National Forest System provides grazing for cattle, horses, sheep, and goats during one or more seasons of the year. The grazing allotments are managed by means of a plan that describes prescriptions for efficient use and sustained production.

Forest Service Rangeland Condition

(Million Acres)



Total acreage—54.7 million

Figure 22

Grazing Use
(Million Animal Unit Months)



In 1982, improved management (which begins when one or more actions prescribed in the management plan have been completed) started on 705 of the grazing allotments. Improved management was maintained on 62 percent or 6,886 allotments which represents a slight increase over 1981.

	Total Allotments	Improved Management Maintained (total acres)	Improved Management Started (in FY '82)
1980	10,754	6,378	1,236
1981	10,871	6,705	677
1982	11,069	6,886	705

Cost-effective investments for range improvements on the National Forest System were made on areas of highest priority. To assist managers in making effective decisions, a handbook was issued in 1982 that explains an analysis process for use in developing allotment management plans and selecting range improvement projects.

Receipts

Receipts from the grazing program amounted to 38 cents for every dollar spent.^{6/} In 1982, grazing receipts decreased by 12 percent from

^{6/} Includes all costs and receipts.

1981, from \$14.9 million to \$12.2 million. The decrease, down 23 percent from the peak in 1980, is a reflection of reduced grazing fees and not a reduction in grazing use.

In the Public Rangelands Improvement Act of 1978, Congress established the formula that the Forest Service and the Bureau of Land Management are to use for calculating grazing fees through 1985. The formula includes factors based on what the farmers and ranchers spend on production of livestock and what they receive from sales.

In 1982, as also required by the act, the Forest Service and Bureau of Land Management jointly initiated a review and evaluation of grazing fee calculations.

The four tasks in this process are to evaluate the current fee formula, to evaluate how close the current fee is to economic value, to evaluate other fee options, and to recommend a fee system for 1986 and subsequent grazing years.

The Secretaries of Agriculture and the Interior will jointly provide Congress, by December 1984, with fee system recommendations based on information collected in the study. This will allow Congress a year, prior to the 1986 grazing season, to act on the recommended system.



Figure 23. Casa Vieja tract prior to restoration, Inyo National Forest, CA.



Figure 24. Same tract after restoration work had been completed.

Soil and Water

Watershed improvements were accomplished on 7,720 acres through soil and water funding and improvements on another 4,098 acres were attained through the use of money collected from timber sales under authority of the Knutson-Vandenberg (K-V) Act, and through YCC, volunteer, and other human resource programs. This represents 109 percent of the funded target and 42 percent accomplishment of the 1982 RPA scheduled activity.

Management

The 1982 soil and water program emphasized production of goods and services from National Forest System lands in a manner that assures maintenance of soil productivity and water quality. Major activities included: the integration of soil and water consideration into resource management plans, developing techniques to prevent soil loss or damage and to protect water quality from the effects of land-disturbing activities, monitoring the effectiveness of current practices in maintaining soil and water values, quantifying water needs and securing water rights, and maintaining soil and water improvement projects.

Figure 25

The largest single activity for soil and water specialists in 1982 was providing technical assistance for the timber sales program. A high level of minerals exploration and development was maintained and was the next largest supported activity.

Soil and Water Resource Improvement

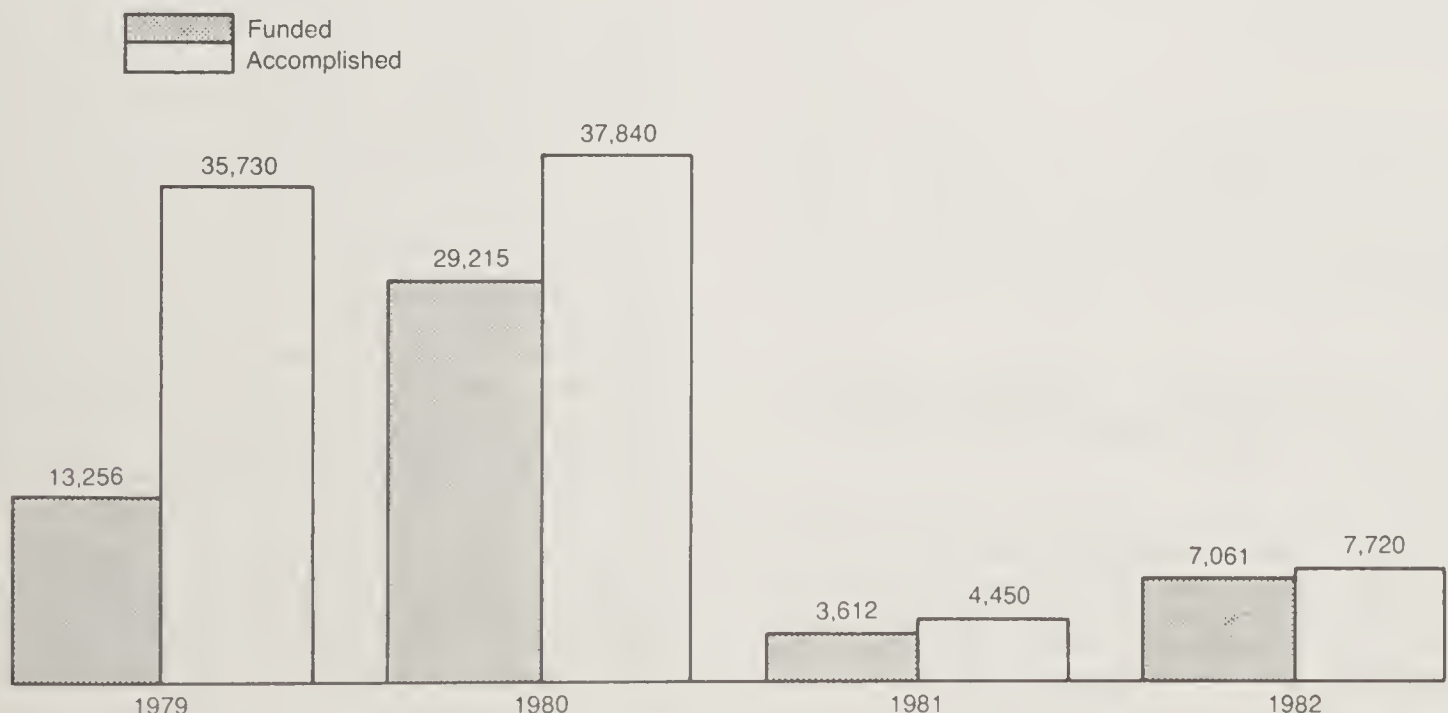
Watershed improvement projects are undertaken to improve soil stability, prevent stream siltation, and enhance soil productivity.

Improvement was completed on 7,720 acres with regularly appropriated funds, 659 acres more than was anticipated (figure 25). The increased amount was accomplished through increased efficiency.

In addition to the K-V watershed improvement work, 310 acres were treated using funds provided under the Emergency Flood Prevention Act. Much of the watershed improvement work done in 1982 by the Forest Service in the Mount St. Helens National Volcanic area was accomplished with K-V funds.

The small number of forest fires in 1982 minimized the amount of emergency treatment necessary on burned areas. Emergency treatment measures of grass seeding, erosion control structures, etc., were applied to 6,676 acres.

Soil and Water Resource Improvement
(Acres)



Inventories

In 1982, soils inventories were completed on 7.9 million acres. These inventories, which are essential to wise resource management, provide information about soil productivity, erosion and stability problems, and relationships between vegetation and water yield. Most Forest Service soils surveys are conducted as a part of the National Cooperative Soils Survey.

FACILITIES

Roads

Transportation is a primary element in the development, management, protection, and enjoyment of National Forest System resources.

Direction, criteria, and procedures for selecting road design standards were revised in 1982. New direction includes: minimizing reconstruction; reducing road standards; restricting the amount of road surfacing; reducing the level of slash disposal on road rights-of-way; and closing some roads when the timber sale has been completed.

In 1982, the transportation program was directed to areas where, on a short-term basis, limited investments were needed to continue current programs and use. Development of the transportation system was continued in support of the timber program, in cases where timber purchasers built roads in exchange for timber, and where construction would facilitate short-term timber harvest.

--To support the timber program--The construction or reconstruction of many roads to manage resources other than timber was deferred during 1982.

--To fully utilize purchaser credit--Purchaser credit is used when roads are built in exchange for timber purchased. Its purpose is to construct the roads needed for current timber sales. This frees appropriated funds for use in building roads for future timber sales, and for engineering support on roads built by the purchaser.

--For limited capital investment funding--Emphasis was placed on the construction of facilities to harvest timber in the short term (1-3 years).

In fiscal year 1982, overall unit costs for road construction were essentially the same as in fiscal year 1981. The agency has been able to keep costs at the same level by continuing its emphasis on reducing road standards for construction, and by limiting reconstruction to

what is essential for maintaining the road for timber hauling. Intensified competition has also resulted in reduced construction costs. In addition, the low demand for timber has lessened the demand for road construction.

Purchaser construction showed a 4 - percent increase in costs in fiscal year 1982 in spite of the emphasis to reduce costs. New construction increased by 11 percent and reconstruction decreased by 43 percent. Reconstruction is 30 to 40 percent less expensive than new construction; therefore, by decreasing reconstruction and increasing new construction, unit costs have increased.

Many of these roads will not be open to the public because of the safety hazard of mixing public traffic and timber haul traffic on reduced-standard roads. Since these roads were built to serve a single resource (timber), future resource needs may necessitate reconstruction to a higher standard. Also, many of these roads will be closed to traffic during wet weather when they and other resources are more susceptible to damage.

In 1982, 1,867 miles of road were constructed or reconstructed with appropriated funds on National Forest System lands. The funded target of 1,130 miles was exceeded by 65 percent, generally because of lower bid prices and reduced road standards. A total of 120 bridges was also constructed. Nearly 75 percent of these roads were located in the major timber-producing regions of Montana, northern Idaho, Washington, Oregon, California, and the Southeast. More roads (279 miles) were built or rebuilt in Oregon than in any other State (table 40).

Timber purchasers fell short by about 2,015 miles of the 8,879-mile target for timber purchaser road construction. The construction of roads by timber purchasers is dependent upon the sale of timber by the Forest Service. The 2,015 miles of road not constructed by timber purchasers in 1982 are tied directly to timber sales which were not sold. Timber purchasers constructed 5,612 miles of road and 135 bridges and returned 1,251 miles to the Forest Service for construction under the purchaser option (tables 40 and 41). Many small purchasers elect to have the Forest Service construct these roads in lieu of purchaser credit. This is done because the purchasers do not have the equipment or people to build roads and they must use their own capital to construct the road before credits are obtained.

Thirty percent of all purchaser road activity (1,916 miles) occurred in the Pacific Northwest. Historically, nearly one-third of all roads are constructed in this area. Although much of the road activity on National Forest System land was

in this Region, the miles of road built or rebuilt were down 23 percent from anticipated levels because of a depressed lumber market.

About 80 percent of road construction/reconstruction is financed from purchaser credit. Roads constructed or reconstructed from timber purchaser credit funds do not include engineering support, such as design, survey, and contract inspection. This is significant when comparing cost per mile of roads built by different funds. In 1982, each dollar of purchaser credit required 29 cents of engineering support.

There were more than 300,000 miles of roads on National Forest System land in fiscal year 1982. The Forest Service identifies five levels of maintenance based on the type and frequency of care a road is given. These levels are:

--Level 1 -- Essentially closed to all traffic. Maintenance only as required to protect resources. 82,732 miles.

--Level 2 -- Closed to all but high clearance vehicles. Basically the same as level 1 except open to traffic. Passenger car traffic is not a consideration. 129,140 miles.

--Levels 3, 4, and 5 -- Maintained for passenger car traffic. Road standards, traffic volume, and degree of user comfort increase as you go from level 3 to level 5. 89,000 miles.

In 1982, 70 percent of the roads were treated at the two lowest levels, while the remaining 30 percent, were treated at the three highest levels.

INTRODUCTION

The mission of State and Private Forestry is to improve the forest management on private and non-Federal public lands. Other principal goals are fire protection on private and non-Federal public lands and protection from insects and diseases on all lands, including those administered by other Federal agencies.

Through State and Private Forestry programs, private landowners, forest users, and State and local governments can receive assistance--both financial and technical--for the management, planning, and protection of their forests and forest operations.

The Forest Service and the State forestry organizations agree upon the level of financing needed to accomplish the planned work with combined Federal and State funding. (Tables 42, 43, and 44 compare selected funding levels, targets, and accomplishments.)

The Forest Service role is to then distribute the financial and technical assistance to State forestry organizations, which then work directly with landowners. In other words, the Forest Service administers; the States implement.

In addition to providing assistance, State and Private Forestry programs complement Forest Service Research programs by disseminating research findings.

The State and Private Forestry cooperative programs are presented in four categories:

- Cooperative Resource Protection
- Cooperative Resource Management
- General Forestry Assistance
- Other programs

The first three categories include programs for which funds are appropriated to the Forest Service. "Other programs" includes those for which funds are allocated to the Forest Service by other Federal agencies. In both cases funds are passed on to the State forestry agencies to accomplish the work.

COOPERATIVE RESOURCE PROTECTION

The Cooperative Forestry Assistance Act of 1978 provides for assistance in forest pest management and rural fire protection.

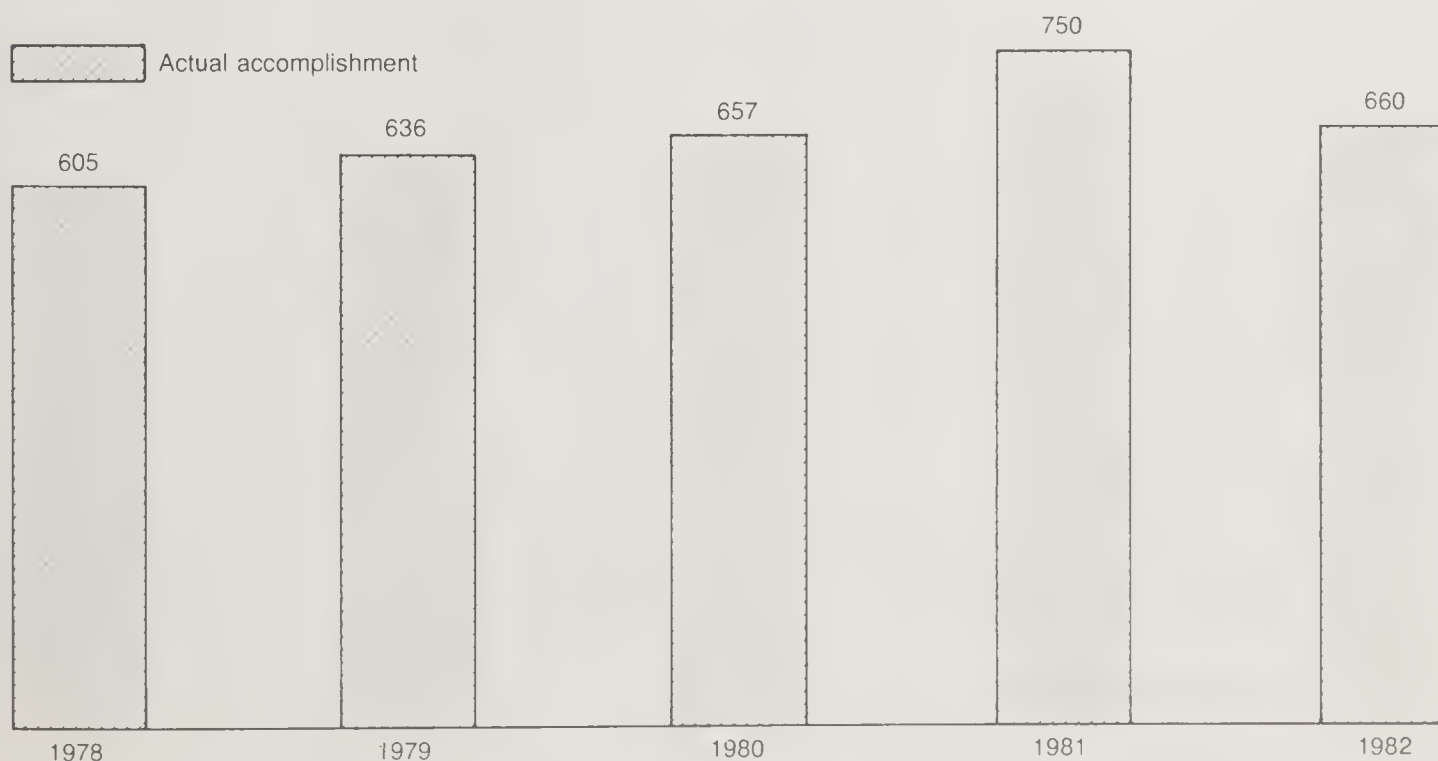
Forest Pest Management

The Forest Pest Management program provides for the protection of the forest resources on lands

Figure 26

Insect and Disease Surveys

(Million Acres)



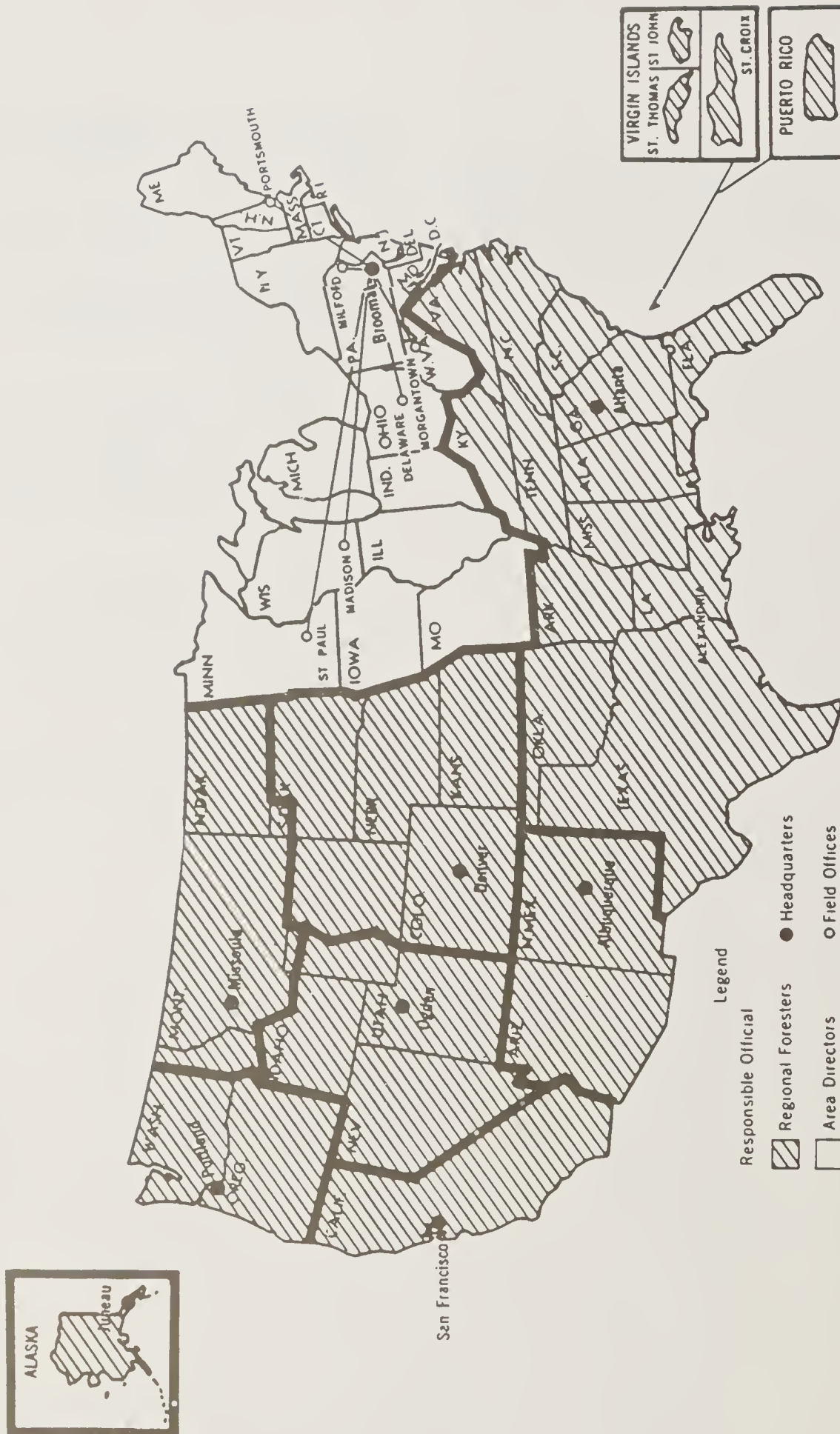


Figure 27. State and Private Forestry Regions (West) and Area (East) of the Forest Service.

of all ownerships from forest insects and diseases. Forest Pest Management works directly with the National Forest System (NFS) and cooperatively with other Federal and State officials in providing survey, prevention, suppression, technical, and financial assistance. This program was funded at \$23.8 million in 1982. The Forest Service reprogramed additional funds for the pest management program.

All program accomplishments exceeded the funded targets and 1982 RPA scheduled activities and outputs.

Survey and Technical Assistance

Early detection and evaluation of pest problems can mean that the loss of trees and the cost of suppression are reduced.

Detection and evaluation surveys were made on 660 million acres of forest lands of all ownerships. This is 167 million acres more than the 1982 RPA scheduled program activity of 493 million acres, and 112 million acres more than targeted in fiscal year 1982. The increase reflects the increased workload caused by the large gypsy moth and spruce budworm outbreaks in the Northeast and the western spruce budworm and mountain pine beetle outbreaks in the West. It also reflects greater efforts to detect potentially damaging

southern pine beetle infestations in the South so that early suppression activities can be initiated.

In addition, technical assistance and new technology were provided to land managers and State pest specialists, and special emphasis was given to including insect and disease management strategies in resource management plans.

Suppression

Forest Pest Management programs provide for the protection of all forest resources. An integrated pest management approach is used to protect timber, watersheds, recreation, wildlife, and esthetics. This approach employs a variety of tactics, including silvicultural, biological, chemical, mechanical, and manual means. Emphasis is on thorough pretreatment examinations to determine critical control needs.

The significant damage caused by gypsy moths was one of the most important problems in 1982. Gypsy moth larvae defoliated trees on 8.2 million acres in the Northeast. Although this was a 37-percent decrease over 1981, it was the second highest acreage on record. Cooperative gypsy moth suppression projects were conducted in Maine, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, and Rhode Island. Larval populations were reduced and foliage was



Figure 28. Female Gypsy Moths laying eggs

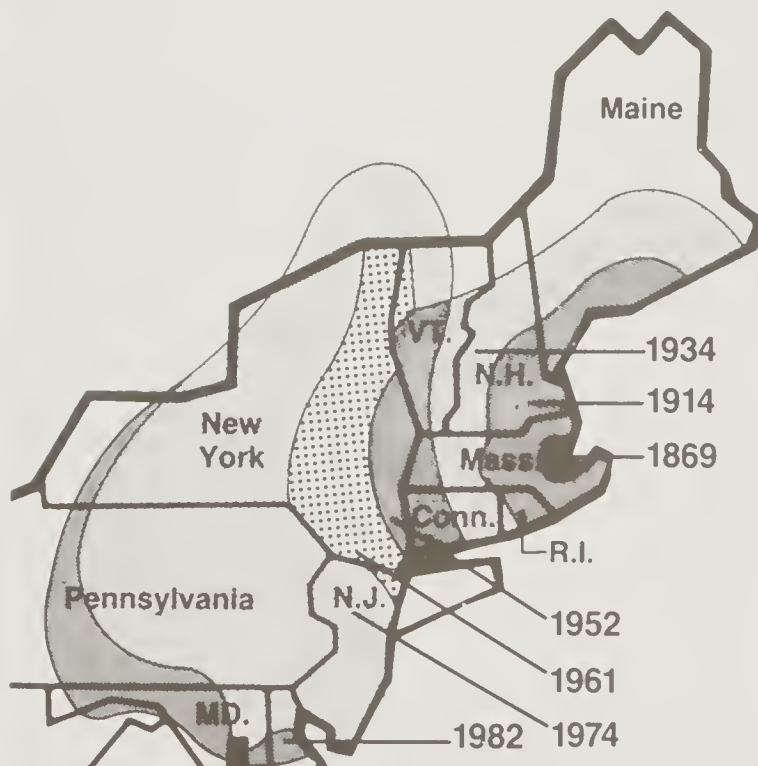


Figure 29. Gypsy moth defoliation.

protected on 727,000 acres of forested communities and recreation areas with the use of chemical insecticides and the bacterium Bacillus thuringiensis (B.t.) (figures 28 and 29).

Major insect suppression projects were also conducted against the spruce budworm in the Northeast; dwarf mistletoe, mountain pine beetle, and spruce budworm in the West; and southern pine beetle in the South. A total of 2.7 million acres received treatment.

This resulted in saving an estimated 11.1 million cords of wood valued at \$155.4 million, 663.9 million cubic feet of merchantable timber, and 22.4 million cubic feet of infested timber.

Special Projects

Thirty-six special projects were conducted to acquire information or transfer new technology. Included were collecting data on losses caused by forest pests, producing the Douglas-fir tussock moth virus, and participating in the National Agriculture Pesticide Impact Assessment Program, which provides use and benefit information on pesticides to the U.S. Environmental Protection Agency. One hundred and ninety-four Federal employees were trained and certified in the proper application of pesticides to meet the requirements of the Federal Pesticide Act of 1978, as amended.

Pesticide Use on National Forest System Lands

Pesticides are a component of integrated pest management. They are used to accomplish such things as prevention and suppression of insect and disease outbreaks, reduction of unwanted vegetation, and control of damage-causing animals. Pesticides are prescribed only after rigorous environmental analyses determine appropriate use. Only chemicals registered by the U.S. Environmental Protection Agency are used.

In 1982, 585,000 acres of National Forest System lands were treated with pesticides, including 248,000 acres for vegetation management, 215,000 acres for insect and disease prevention and suppression, and 122,000 acres for animal control (figure 30). This represents pesticide applications on less than 1 percent of all National Forests and Grasslands. No known significant adverse environmental effects from the use of pesticides occurred in 1982.

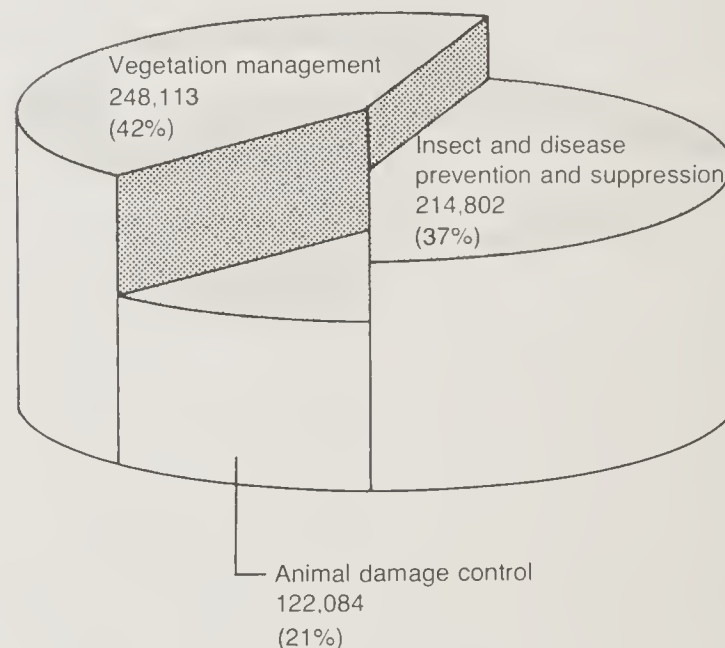
Table 45 is a summary of all pesticides used on the National Forests and Grasslands in 1982.

Rural Fire Prevention and Control

The Rural Fire Prevention and Control Program provides financial and technical fire protection

Figure 30

Pesticide Use on National Forest System Lands (Acres treated)



Total acres treated—584,999

assistance to the States. Federal funding for this program in fiscal year 1982 was \$14.2 million and helped provide protection to 739 million acres.

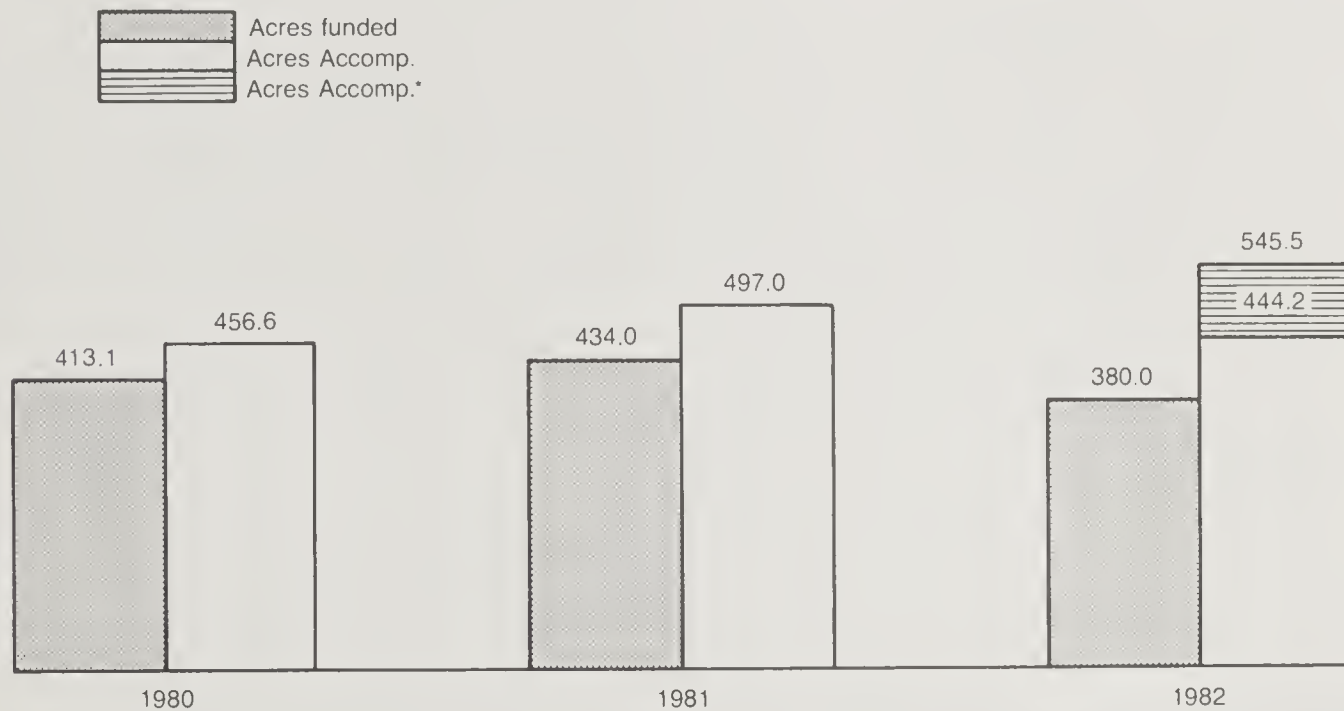
The National Analysis of the Fire Protection Efficiency on Non-Federal Wildlands, indicates that a considerable adjustment in the distribution of money is needed at the State level before efficient protection is achieved.

The analysis also found that: current expenditures are sufficient to provide efficient protection, and, if necessary adjustments are made, further reduction in fire losses can be expected. Additional studies on the economic efficiency of fire protection are underway.

FIRETIP (Firefighting Technologies Implementation Project) was assigned the lead role in implementing the National Interagency Incident Management System (NIIMS). This system enables managers to use the combined fire suppression resources of cooperating fire protection agencies. The Forest Service provides information on the system to Federal, State and local agencies, and coordinates the development of training materials. The staff provided technical assistance in implementing NIIMS in Florida and Colorado and is also assisting other units (States, Forest Service Regions, etc.).

Figure 31

Reforestation (Thousand Acres)



*Includes assistance in the selection of harvesting practices to facilitate natural regeneration—not reported in prior years.

In 1982 forestry representatives of all States, plus Puerto Rico, the Virgin Islands, and Guam, signed cooperative agreements with the Forest Service to participate in the Federal Excess Personal Property Program. The agreements signal a new Federal and State commitment to improve rural fire protection. Federal excess personal property (such as pumps, vehicles, and radios) valued at more than \$37 million was assigned to State Forestry agencies in 1982.

COOPERATIVE RESOURCE MANAGEMENT

The Cooperative Forestry Assistance Act of 1978 authorized assistance for forest management, wood utilization, organization management, resource planning and technology implementation activities. For information on the accomplishments, see tables 43, and 46 through 49.

Forest Management and Utilization

The Forest Service provides technical assistance to owners of nonindustrial private forest lands (141,500 owners during 1982) to improve forest management and the efficiency of wood utilization, and to nurseries to improve tree seedling production. Technical assistance is also provided to maintain or improve soil

productivity and watershed values, and to improve tree seedlings genetically.

Overall accomplishment was 83 percent of RPA scheduled activities and outputs for 1982.

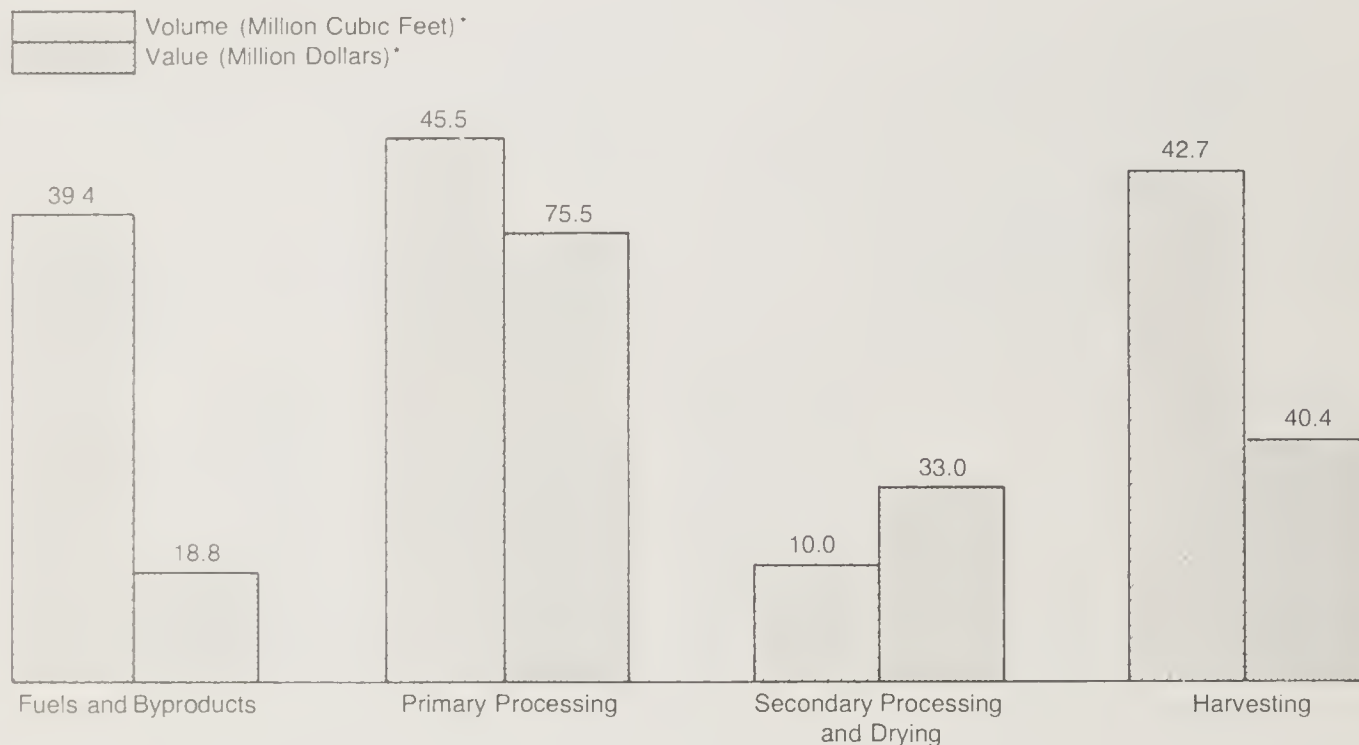
Refer to Table 43 for a detailed breakdown by specific program.

In 1982, Forest Management and Utilization funding totaled \$16.2 million. A primary emphasis was on reforesting nonindustrial private forest lands to help meet the Nation's future softwood needs. Other emphases were on accelerated tree improvement and State nursery expansion in the South. As a result, additional nursery production capacity of 100 million pine seedlings will be available in the South in 1983. Emphasis on tree improvement will insure that most southern pines planted after 1990 will be genetically improved and faster growing.

Nationwide, about 444,200 acres of nonindustrial private lands were planted and seeded, a decrease of 52,800 acres from 1981. However, when acres of reforestation attributable to natural seeding are added, the number of acres reforested increased, for a total of 545,500 acres. (figure 31). This was 59 percent of the 1982 RPA scheduled activity.

Figure 32

Forest Products Utilization



*Total Volume—137.6 million cubic feet; total value \$167.7 million.

The reduction in tree planting and seeding is a reflection of economic conditions prevailing during the year. Planting rates are expected to rebound with the economy. The acres planted and seeded include those accomplished through the Forestry Incentives and Agricultural Conservation Programs.

Forest Management and Utilization involves not only the planting of trees, but their use after harvesting. Despite sharp cutbacks in the logging and lumber industries during the past year, demand for wood utilization improvement services has remained relatively high.

Efforts centered around four major activities: harvesting (cutting and hauling wood to the mill), primary processing (initial milling of logs), secondary processing and drying (finishing into desired sizes and products, drying, construction, and manufacturing), and fuel and byproducts (developing or recovering fuel and fiber products).

A total of 129 sawmills and more than 275 logging firms took advantage of the Sawmill Improvement Program and the Improved Harvesting Program. Technical assistance provided through these and other programs directly influenced the

improvement in the use of 137.6 million cubic feet of wood products.

An average increased value of \$1.22 per cubic foot is associated with the use of wood for higher valued items. For example, when improved log cutting and manufacturing precision result in higher lumber yields, a value of \$1.68 per cubic foot is gained over the value of that same volume if it is converted to planer shavings or residue chips.

In 1982, the overall program benefit was \$167.7 million. The Federal share of program support totaled \$4.98 million; \$34 of public benefits were achieved per Federal dollar expended. Figure 32 illustrates volumes and values recovered (based on actual field studies).

The Truss-Framed System, developed by the Forest Products Laboratory and now being promoted by State and Private Forestry, offers homebuilders a new, fast, efficient, cost-cutting method for framing residential and light commercial buildings. Using the Truss-Framed System, structural framing and enclosure for an average house can be done in 1 day or less with a crew of four. A conventional house would take 1½ weeks using a three-man crew. The Truss-Framed System also requires less wood than conventional

Assistance in Management Planning and Technology Implementation

This group of programs helps State Foresters efficiently plan, manage, and protect non-Federal forest lands.

The Organization Management Assistance program helped State Foresters improve their organizations so that they could be more effective in accomplishing forestry goals. Key activities include: workload analyses, performance evaluation, executive development, employee training, and improvement of organization management practices. One activity of high priority is helping State Foresters reflect long-range goals in their operating plans. The 222 reported assists, 46 percent above the 1982 RPA scheduled output, represent a change from a "doing" to a facilitating role.

The primary emphasis of planning assistance is to help each State devise and use a systematic process for forest resources program planning.

The 1982 RPA schedule of covering 138 million acres with plans was exceeded by 79 million acres, which is 157 percent of the goal.

Financial assistance totaled approximately \$1.71 million in 1982. Thirteen States have completed "first generation" State Forest Resources Plans. Most of the remaining States expect to complete plans in 1983.

Specific technology implementation endeavors are underway in the Great Lakes area to convey knowledge on pest problems to Christmas tree growers. In the mountain States of the West, where limited water supplies are a problem, an active transfer program helps private landowners increase water yields and use water more efficiently.

Two technologies developed at the Forest Products Laboratory have been successfully transferred to private industry. The Herty Foundation is using a press drying concept that allows paper manufacturers to use, for the first time, 100 percent hardwood pulp for linerboard. A Boise Cascade mill in Yakima, Wash. has begun production and performance analysis on a powered back-up roller, a technology that enables mills to process more plywood from a log.

A timber Inventory and Management Planning Information System has been implemented in Maryland and Minnesota. This computer program helps landowners of small private forests make management decisions.

GENERAL FORESTRY ASSISTANCE

Special emphasis was placed on two projects in 1982. They involved the Pinchot Institute for Conservation Studies and the Boundary Waters Canoe Area.

Pinchot Institute for Conservation Studies

The Pinchot Institute for Conservation Studies is located in Milford, Pa. It is housed at Grey Towers, the former home of Gifford Pinchot, first Chief of the Forest Service. The picturesque, 161-acre estate is a National Historic Landmark.

The Institute furthers conservation programs through research, analysis, and conferences. For example, the Institute helped plan and organize the Second National Urban Forestry Conference and the Seventh American Forestry Congress, and developed a process to incorporate forecasting and analysis into formal planning processes, such as RPA.

Boundary Waters Canoe Area

The Boundary Waters Canoe Area Wilderness Act of 1981 authorized the Secretary of Agriculture to cooperate with the State of Minnesota in the development of renewable resources of State, county, and private lands. In 1982, the \$3 million appropriated for the purpose reforested 17,000 acres, improved timber stands on 9,000 acres, produced 22 million tree seedlings, and improved or maintained more than 800 miles of forest roads. The 3-year program that provided financial and technical support to resort owners and outfitters in and adjacent to the Wilderness was completed.

OTHER PROGRAMS

State and Private Forestry cooperates with other Federal agencies in administering some programs. Funds are appropriated to the other agencies, which then allocate funds to the Forest Service for the forestry aspects of the programs.

Incentives

The Forestry Incentives Program (FIP) and the forestry practices of the Agricultural Conservation Program provide incentives for nonindustrial private landowners to invest in reforestation and timber stand improvement work.

Fifty-eight percent of the commercial forest lands in the United States are managed by these private owners. This land is currently producing at only 63 percent of potential.

Since 1973, the Forestry Incentives Program has been responsible for more than 2.3 million acres of treatment. In 1982, 230,000 acres were treated. Under the Agricultural Conservation Program, which has been in existence since 1936, 110,000 acres were treated during 1982. Over the past 5 years these two programs accounted for approximately 50 percent of all reforestation on nonindustrial private lands.

During 1981 and 1982, the Forest Service conducted an economic evaluation of the 1979 program. The evaluation compared the probable increase in timber yield and resulting increase in value with the investment. The FIP was credited with the difference in timber quantity and quality resulting from the Federal and private investment.

The evaluation shows that the 1979 program increased the productivity of treated lands by 1.3 billion cubic feet--enough wood to build 780,000 3-bedroom homes. In addition, the evaluation indicates an 8.6-percent rate of return above inflation on these investments. The Federal taxes paid on the increased income generated by this program will amount to \$2 for every Federal dollar invested.

The Forest Service continues its efforts to make Federal and State forestry personnel, as well as forest landowners, more knowledgeable about tax incentives available to promote increased timber production. It provides current information regarding tax laws that affect timber investments. In 1982, the Forest Service published Agricultural Handbook 596, A Guide to Federal Income Tax for Timber Owners, which brings together the statutes, regulations and tax revenue rulings relating to timber.

In 1982, a draft timber crop insurance policy, jointly prepared by the Forest Service and the Federal Crop Insurance Corporation, was completed. In a pilot study, casualty insurance will be offered for southern pines in selected counties of five Southeastern States. The Forest Service prepared hazard ratings for various risks affecting premium rates. These are ready for approval and testing in the pilot counties.

Rural Community Fire Protection

The Rural Community Fire Protection program provides technical and financial assistance to train, organize, and equip rural fire departments. In 1982, 2,800 applications were approved and funded from more than 30,000 submitted by rural communities.

Resource Conservation and Development

The Forest Service supports the Soil Conservation Service in the forestry aspects of the Resource Conservation and Development Program. Funds allocated to the Forest Service in 1982 totaled \$722,000 for such activities as urban forestry planning, fuelwood harvesting, training, revegetation of surface mined areas, forest management planning, and tree planting in 62 project areas.

Cooperative Watershed Activities

The Forest Service is responsible for forestry aspects of small watershed protection, flood prevention projects, and river basin studies. Overall leadership is assigned to the Soil Conservation Service. Watershed and flood prevention projects primarily aim to control flooding, erosion, and sedimentation to solve a number of local resource and economic problems.

River basin studies are directed toward long-term water and land resource uses on both public and private lands and are regional in scope.

Funding levels negotiated with Soil Conservation Service for watershed and flood prevention, watershed planning, and resource conservation and development were 56 percent, 62 percent, and 11 percent respectively below that which would accomplish the 1982 RPA Program goals. These reductions were a result of completing the forestry phases of several projects, changing emphases when forestry would not accomplish primary program objectives, and reducing the total number of projects. Projects approved for river basin surveys and investigations increased in number, however, with an accompanying increase of 2 percent in funding.

In 1982, planning by State and local sponsors, with technical and financial help from the Forest Service, was concentrated on 51 small watersheds with allocations of \$294,000 and 47 river basins with allocations of about \$1.5 million.

The Forest Service spent \$712,000 to implement forestry aspects of plans on 70 small watershed projects across the Nation.

Forest Research

INTRODUCTION

The Forest Service, through its research program, is responsible for developing scientific and technical knowledge to enhance the economic and environmental values of America's 1.6 billion acres of forest and associated rangelands.

Research is conducted through eight regional Forest and Range Experiment Stations and the Forest Products Laboratory at Madison, Wis. (figure 34). Some 4,000 studies are carried out at any one time by approximately 900 scientists at 79 locations throughout the United States, Puerto Rico, and the Pacific Trust Islands.

The research program is planned and coordinated with related efforts at the 60 forestry schools and the agricultural experiment stations at land-grant institutions throughout the United States. Forest Service scientists also work closely with researchers from other public agencies and forest industries.

Forest Service research is closely coordinated with and strongly supports National Forest System management and State and Private Forestry programs. Many of the scientific accomplishments described in this report will become part of the technology used in the management of National Forests. Through publications, symposia, workshops, and direct public contact, the Forest Service transfers its research findings to Federal, State, and local policymakers, and public and private land managers. (A detailed breakdown of fiscal year 1982 publications is presented by subject area in table 52.)

The research programs also support international forestry through cooperation with other agencies, the United Nations, and foreign countries.

In fiscal year 1982, emphasis was given to several of these areas: eastern hardwoods, softwood utilization and management, integrated pest management, rangeland research, disturbed area rehabilitation, wildlife habitat management, acid rain, multiresource evaluation, snow management, international forestry, and silviculture and genetics.

In 1982, research appropriations totaled \$112.5 million, approximately 9 percent of which supported cooperative studies at colleges, universities, other research organizations, and industry. In addition, the Forest Service received more than \$2 million from outside sources for cooperative research. (A breakdown of the research budget, including funds expended for cooperative research, is shown in tables 53 and 54.)

Scope of the Research Program

The research program covers an extensive spectrum of biologic, economic, engineering, and social disciplines and supports the mission and goals of the President, the Department of Agriculture, and the Forest Service. The research is generally long range and high risk. Research projects can be supportive of Federal action programs, such as management of National Forests, or directed toward critical consumer interests, such as lumber standards and fire safety. The goal of this research is to learn how society can best use and protect plant, animal, soil, water, and esthetic resources. In this endeavor, equal emphasis is placed on conservation of renewable resources and productivity to meet the needs of a growing Nation and improve the environment.

Much of the research is national, and some international, in scope and extends to nearly every major terrestrial ecosystem. The geographic range of the program is from the tropics to the Arctic and from Hawaii and territories in the Pacific to Puerto Rico in the Atlantic.

Research Planning

Forest and range resources will make increasingly important contributions to the quality of American life in the decades ahead. A recent report--the result of continuing national and regional planning efforts by forestry schools and universities and the U.S. Department of Agriculture--describes current and projected research for improving the contributions of this Nation's forest and range resources to American society.

Research proposed in the report titled 1980-1990 National Program of Research for Forests and Associated Rangelands is designed to respond to changing needs for which technology is inadequate; contribute to productivity, foreign exchange, and other benefits; and respond to national policies--particularly those delineated by the executive and legislative branches of the Federal Government.

Most of the research required to deal with important problems of forests and associated rangelands must be undertaken at the regional and local levels--within a national context. In that regard, the report describes future research goals for four broad geographic regions of the country and the Forest Products Laboratory at Madison, Wis.

Another report published in 1982 identifies basic research needs. This report, Our Natural Resources: Basic Research Needs in Forestry and

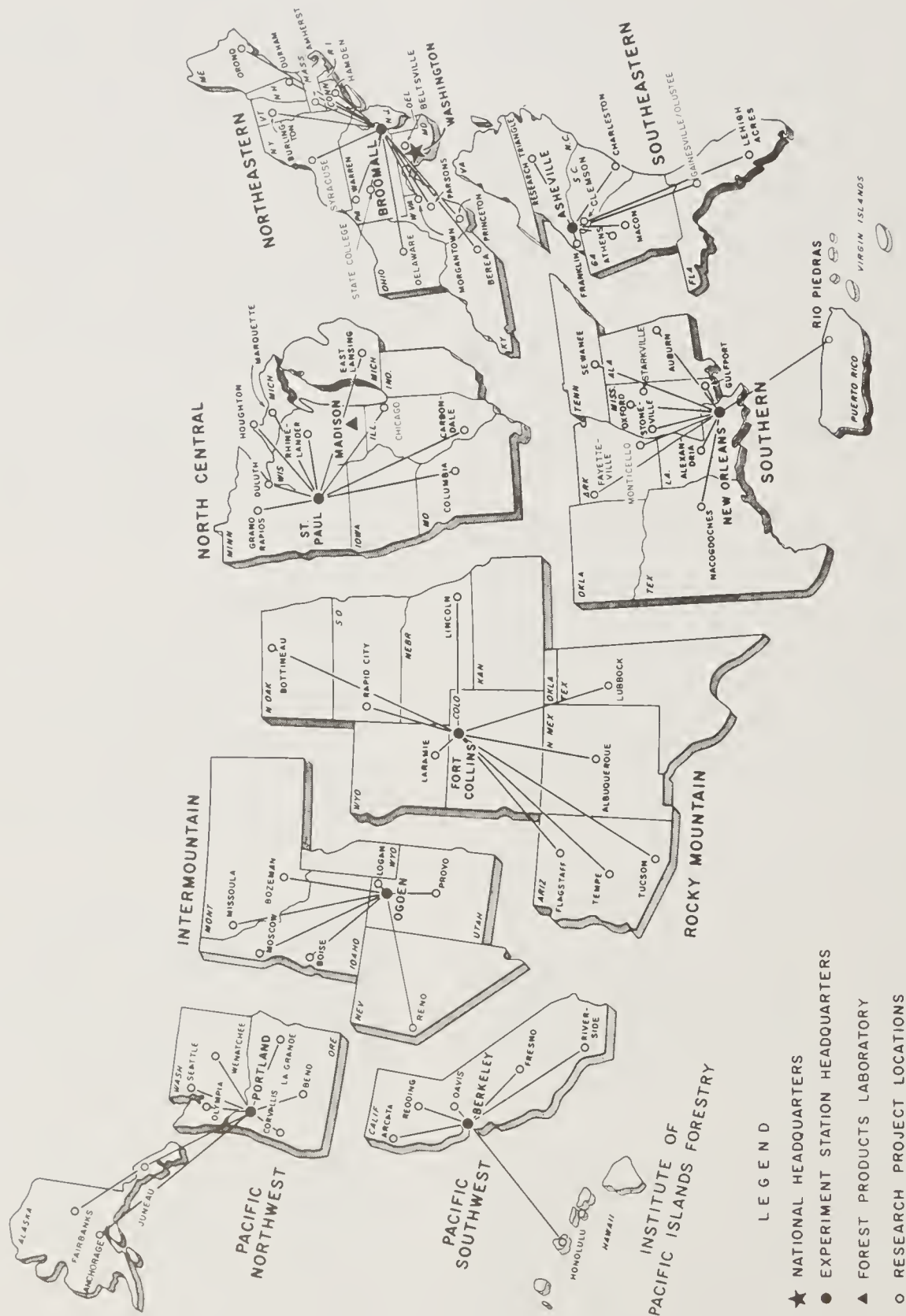


Figure 34. Forest and Range Experiment Stations and Forest Products Laboratory

Renewable Natural Resources, was prepared by a national task force of 17 scientists representing the spectrum of forestry research in the United States.

Research Programs Analyzed

Early in 1982, the Office of Management and Budget directed the Forest Service to study its research program. The intent of the study was to classify the elements of the program and analyze the use and relevance of research. The program was classified into basic research; research explicitly called for by Federal statutory or regulatory requirements; research necessary to manage and protect Federal resources; research related to national defense; high-risk, long-term applied research; and applied research that could be performed by the private sector for profit.

The Washington Office technical staff classified 757 research problem areas. They fell into the six categories as follows:

Category	Proportion of Program (percent)
Basic research	38
Statutory related	9
Management of the National Forests	44
Defense related	1
High-risk, long term applied	6
Applied research resembling industrial research	2
Total	100

While the largest single research component is directly related to management and protection of National Forests, most of these research results are applicable to private forest lands as well. Likewise, research results in each of the six categories are not the exclusive property of a narrow group of users but are published and available to the entire scientific community and the general public.

Following this classification, the Forest Service-OMB team selected 15 case studies for in-depth analysis on the use of the research, its relevance to the public interest, duplication of private-sector endeavors, and related aspects. The case studies involved research in forest products and engineering, timber management, forest insects and disease, urban forestry, fire, and economics. The team identified 64 research users and invited them to participate through telephone interviews.

The study findings signify the importance, use, and appropriateness of the research

investigations. There was strong confirmation that the research results in most cases were already being used, and numerous specific instances were cited. In other cases where the research had not reached a "delivery stage," respondents said that they were confident it would be used if the present expectations of research success were realized. A summary statement often given was "If the Forest Service did not do this, who would?"

All 64 respondents stated that the research was important and that there were significant public and private benefits that have resulted, or should result, from the research. Furthermore, they felt that research results already were being used or would be used as they become available.

These opinions were expressed in a variety of ways, but the most frequent phrases used were:

The research does or will reduce the costs of forest management on public and private land.

The research does or will provide the consumer with a safer or better product.

The research helps to protect, conserve, and extend the Nation's forest and timber resources.

The research does or will result in a reduction in product manufacturing cost and subsequent market price.

The research can contribute to reduced energy costs for the Nation.

The research contributes toward the goal of increasing employment opportunities in forested rural areas of the country.

All respondents also stated that the research problems under discussion definitely were appropriate areas of investigation for USDA. A variety of reasons were cited, but some of the more frequent reasons given were:

USDA and the Forest Service have the responsibility for managing and protecting the National Forests.

USDA and the Forest Service have the responsibility to plan and ensure that the Nation's timber and wood supplies are adequate to meet future needs.

Large firms simply will not spend money on research unless projected monetary gains (their own market share) are large, risk is low, and proprietary control of research output is possible.

In some instances, there can be legal problems (antitrust) when private companies cooperate in a joint research venture; USDA role with private cooperation overcomes this problem.

Government sponsored research is "neutral" and objective; thus providing the user with technically reliable research results.

In many sectors of the forestry and wood products industry, the firms or individual participants number in the thousands and are not financially able to do research themselves or effectively band together to finance research by others.

Forest Service research serves as a "leader" and a catalyst in these research subject areas.

The study provided an excellent opportunity to review the adequacy of the U.S. Department of Agriculture and Forest Service policies on the role of Federal research and the involvement of research users in the research process. Results will help the Forest Service improve management, program direction, and establishment of priorities.

Research in Southeastern Alaska

Passage of the Alaska National Interest Lands and Conservation Act in 1980 provided funds for the Tongass Timber Supply Fund. A portion of these funds was allocated to Forest Service Research to maintain or increase productivity of forest resources of the Tongass National Forest in an environmentally acceptable manner. Plans were developed in fiscal year 1981, and research began in fiscal year 1982. Research is underway and some findings to date are:

--Some 200 plots installed to assess timber growth show much increased yield from thinning young stands. More plots will be added to obtain a good representation of the wide variety of sites and conditions.

--New research shows how low-growing vegetation responds to silvicultural treatment, and emphasizes the importance of this type of vegetation to wildlife.

--Guidelines are being developed for estimating road construction problems and the hazard potential of moving large masses of soil. Also under study are the effects of clearcutting and partial cutting on nutrient cycling and the movement of sediment

--Fish habitat researchers have established the relative importance of main and side streams to Coho salmon production. Other work will

determine the importance of seasonal gravel changes to pink salmon production, and the value of planting hardwoods along streams in clearcut areas.

--An intensive investigation has begun to determine the cause of widespread dying of the valuable Alaska yellow cedar.

--The wood products and energy potential of beach logs (present on southeastern Alaska beaches in huge volumes) are being determined in cooperation with participating sawmill operators. Investigation of the diversified wood products potential of southeastern Alaska forests is also planned.

--Engineers have accelerated efforts to implement use of advanced cable logging systems, to develop anchors for such systems, and to test a newly developed thinning machine.

--Economists have begun to develop a timber-wildlife-fisheries tradeoff model to investigate potential for expanded wood products trade with Pacific Rim countries, and to determine the importance of the wood products industry to the stability of southeastern Alaska communities.

--Research has been expanded to evaluate opportunities for integrating forest recreation planning into multiple-use management of the Tongass National Forest.

LAND AND RESOURCE PROTECTION RESEARCH

Fire and Atmospheric Sciences Research

The objectives of this activity are to prevent and control wildfires; reduce loss of life, property, and forest resources; reduce weather-related losses of forest resources; and use prescribed fire to achieve forest and range objectives at reduced cost. Examples of accomplishments are:

--New mathematical models have been developed to determine when to set prescribed fires, based on moisture content in the trees and other material to be burned. National Forests using this system in the Pacific Northwest expect the reduction of regeneration and erosion-control failures, annual reduction in atmospheric emissions of 150,000 tons, and yearly savings of \$2 million.

--The National Park Service and the Bureau of Land Management are currently using Forest Service-developed satellite mapping techniques to survey vegetation in relation to prescribed burning. Such satellite mapping of fuels costs much less than manual inventory methods. A guide to predicting fire behavior on specific sites has been published.



Figure 35. Male webbing coneworm (Dioryctria disclusa) moths caught in sticky adhesive of a Pherocon LC[®] pheromone trap.



Figure 36. Sixteen-week-old loblolly pine seedlings, the fourth crop grown in the styrofoam block pictured, are ready for outplanting. Styrofoam blocks are the most economical because they can be reused up to six times and stand rough handling at the planting site and on the trip back to the nursery.

--Fire researchers have discovered that air movement during a wildfire--specifically horizontal whirlpools of air moving from treetop to ground level--can blow the fire across the path of firefighters. This process has been duplicated in the laboratory with the aim of predicting when these airflows are likely to occur. This may lead to greater safety for firefighters.

Forest Insect and Disease Research

The objectives of this activity are to enhance the productivity, value, and use of forest and rangeland resources, and to protect wood in use and storage by preventing or minimizing insect- and disease-caused damage. Examples of accomplishments are:

--America's internationally funded insect research program, the Canada/U.S. Spruce Budworm Program, has sponsored studies throughout the budworms' range. In the Pacific Northwest, researchers have found that by examining annual rings of trees, they can determine the intensity and duration of budworm attacks in the past, and what conditions predispose a forest to budworm damage. In the Lake States, a hazard-rating method has been developed to help the manager determine appropriate silvicultural practices to reduce stand vulnerability to insect damage.

--Pheromone traps containing the sex attractant of female insects provide a method for estimating numbers of insects present in a given location (figure 35). Trapping data can be used by managers to anticipate where infestations will occur. Traps are now being used to keep track of webbing coneworm populations in pine seed orchards. Forest Service researchers chemically isolated the coneworm's pheromone, permitting it to be synthesized for use in the traps.

--From a 13-year study, Forest Products Laboratory scientists have learned how to save \$500 million a year by pretreating waterfront structures to prevent decay and attacks by marine borers. Several compounds were found to give total protection to southern pine decking, Douglas-fir planks, and tops of pilings if applied annually.

Renewable Resources Evaluation Research

The objective of this activity is to provide comprehensive, continuing information about and analysis of the forest lands of the United States. Examples of accomplishments are:

--A joint research effort with the Forest Service and the U.S. Department of Agriculture Economics Research Service has produced data on forest ownership. About one-third of the private forest area is owned by corporations, while by far the

largest number of forest landowners (about 71 percent) are individuals who own parcels of 10 acres or less. Knowing these statistics helps the Forest Service motivate landowners to manage their property for tomorrow's timber needs.

--A Louisiana study has yielded new methodology for conducting mid-year timber inventory updates at one-tenth the cost of regular surveys. It inventories changes in a State's timber resource caused by fires, insects, conversion of forest land to agriculture, or timber harvesting. The procedure is also in use in Oklahoma and Mississippi.

Renewable Resources Economics Research

The objective of this activity is to develop improved methods and analyses for the efficient management of the Nation's forest resources. Examples of accomplishments are:

--Projections of increased private forest investments using a newly developed model indicate stabilized prices for wood products, reduced timber imports, and increased production in the South after the year 2000. The increased investments would have little impact prior to then.

--Forest Service investigators in the South examined the Forestry Incentives Program to see if there is a correlation between the Forestry Incentives Program expenditures and numbers of trees planted. Over a long period, researchers found that when large amounts of assistance were provided, the amount of tree planting was relatively high, and lower Forest Incentive Program (FIP) grants correlated with lower planting rates.

--Growing southern pine seedlings is big business, and new research indicates that bare-root seedlings are not as economical to produce as container-grown seedlings (figure 36). Passing this information on at a conference led to the construction of two new nurseries for growing seedlings in containers.

Surface Environment and Mining

The objectives of this activity are to evaluate the impact of mining activities on forests and rangelands and to develop economical and effective surface mine reclamation techniques. Examples of accomplishments are:

--Restoring vegetation on spoils left after mining is difficult, but phosphate spoil dumps are now reclaimable thanks to a 10-year Forest Service project. This study has determined the best plant species to use and which spoil treatments affect revegetation. Technology transfer efforts in this program have been very

successful: the western phosphate mining industry has adopted the recommended equipment and techniques with good results--75 percent of desired ground cover in the second growing season.

--A water quality data base developed for the coal fields of Appalachia is now available for regulatory agencies, mine operators, land-use planners, landowners, and environmental groups.

It helps users assess the influence of surface mining and reclamation on water quality--an important consideration in placing new mines, keeping old ones open, and preventing surface mining where it would compromise water quality.

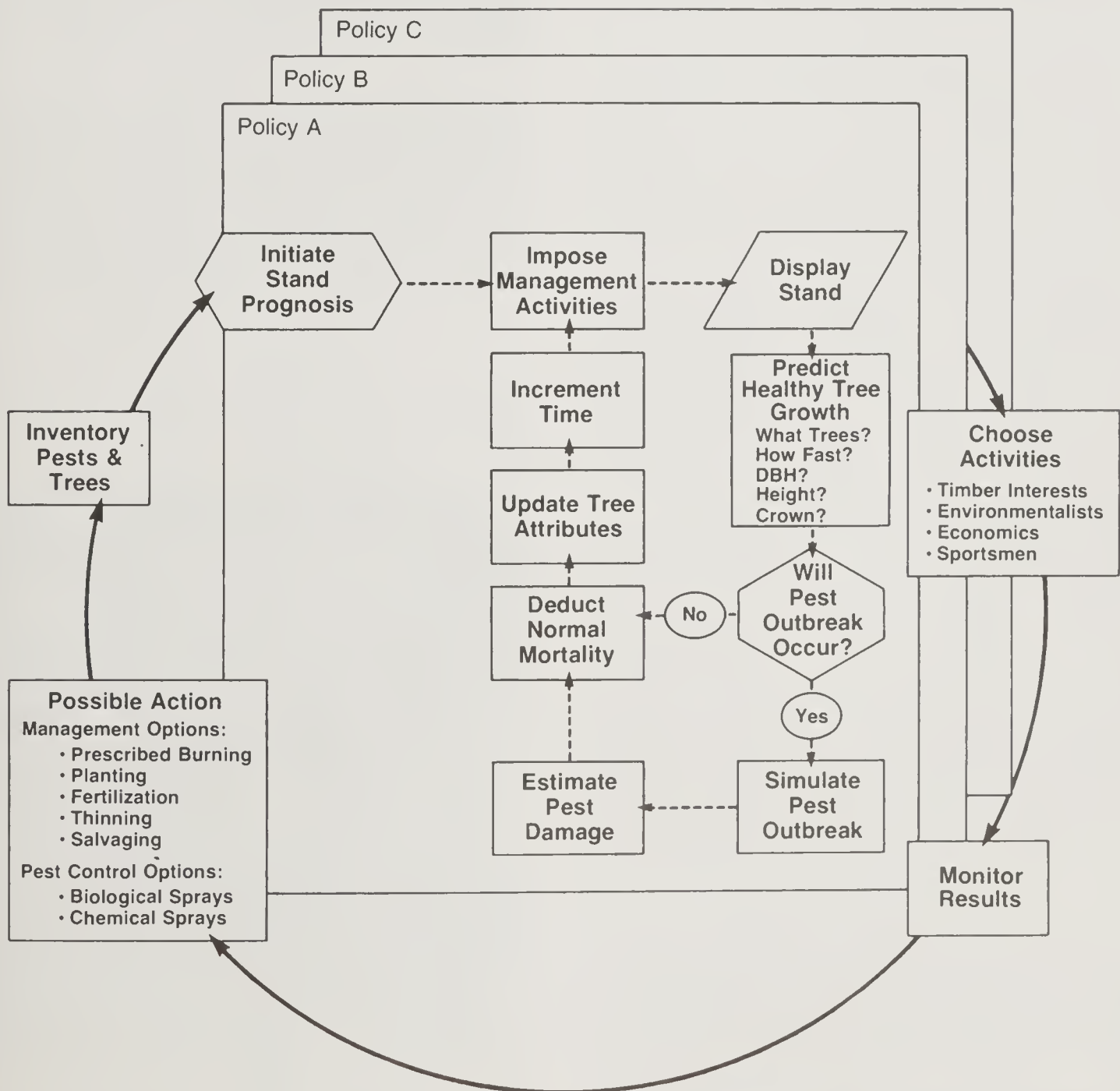


Figure 37. The Prognosis Model can, for example, forecast development of stands affected by pest outbreaks.

RENEWABLE RESOURCE MANAGEMENT AND UTILIZATION RESEARCH

Trees and Timber Management Research

The objective of this activity is to increase the productivity and multiple-use benefits of forest lands, to enhance the growth and quality of forest plantations, and to maintain the productivity of the land as required in the National Forest Management Act of 1976. Examples of accomplishments are:

--A 36-year evaluation of the natural regeneration of loblolly and shortleaf pines on small, nonindustrial lands in the South was completed. Guidelines were formulated based on this evaluation of the seed-tree, clearcutting, selection, and diameter-limit methods for naturally regenerating southern pine forests. The study indicated that all four methods result in adequate pine regeneration with lower costs than planting seedlings or direct seeding.

--A computer model was developed that makes it possible to examine the likely consequences of both silvicultural treatments and tussock moth control activities for forest stands in the northern Rocky Mountains (figure 38). The simulation model is actually a combination of two independently developed models: the Stand Prognosis Model and the Douglas-fir Tussock Moth Outbreak Model. One obvious advantage of this computer tool is that the user can quickly and cheaply compare the effectiveness of rather expensive pest control strategies and silvicultural management options.

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--The Forestry Intensified Research (FIR) Program, which addresses difficult regeneration problems in southwestern Oregon and northern California, completed its fourth year of operation in 1982. Completion of the research program in 10 years is expected to pay large dividends on Federal forest lands. Technology to harvest and reforest the estimated 177,000 acres of Federal lands removed from the timber base could produce direct annual benefits from timber sales of more than \$50 million.

Watershed Management Research

The objectives of this activity are to protect, manage, and improve forest and rangeland watersheds. Examples of accomplishments are:

--Post-eruption research on erosion near Mount St. Helens revealed that salvaging downed timber lessens erosion, but artificial seeding of grasses does little before the vegetation is well established. This research has been shared with the Soil Conservation Service and the U.S. Geological Survey in a major technology transfer effort.

--Using photo-electric particle counters and sophisticated math, Rocky Mountain scientists have discovered that a third of the snowfall in the high plains of the West actually evaporates as it is redistributed by high winds. This new knowledge about snow physics enables engineers to design snow fences and other snow-trapping structures to minimize evaporation and increase the water available for people, plants, and animals in the semi-arid high plains.

--Scientists from the Institute of Tropical Forestry led 50 foresters from 10 Caribbean Islands and Guyana in a discussion of tropical forestry issues--the first such meeting since 1946. They identified four major issues--training, research information on water and forest management, prescriptions for watershed management, and hurricane contingency plans. The Society of Caribbean Foresters was created at this meeting, and another workshop will take place in May 1983.

Wildlife, Range, and Fish Habitat Research

The objectives of this activity are to maintain or improve wildlife and fish habitat, increase forage production, improve soil stability and vegetative cover, and integrate livestock use with other forest and rangeland resource uses. Examples of accomplishments are:

--Wildlife biologists published two major books in conjunction with the Department of the Interior and the Wildlife Management Institute. One book covers the biology of 96 species of mammals found along the Oregon coast. The second discusses management of elk.

--Researchers developed a computer model to achieve better management of the more than 5 million acres of land in the West that are covered with aspen. Aspen cover is a step in the natural succession leading to conifer forests. The model simulates changes in ecosystem components over time and anticipates changes in multiple-use values.

Forest Recreation Research

The objectives of this activity are to increase opportunities for, and benefits from, high-quality outdoor recreation experiences, and to manage vegetation in and near urban areas for developing economic, social, and environmental benefits to their maximum. Examples of accomplishments are:

--A seven-step system has been developed for analyzing recreation management issues. This will allow land managers to design regulations that contribute to rewarding experiences for visitors as well as protect resources.

--It was determined that collecting information about visitor use of trails must be cost-effective and should be unobtrusive enough not to interfere with recreation. Research has shown that getting visitors to register voluntarily at unstaffed stations is as effective as having employees require that they register (figure 38). The less forceful approach probably fits in better with people's ideas of enjoying the out-of-doors for the freedom it affords.

Forest Products Utilization Research

The objectives of this activity are to use cut timber more efficiently, including all species,



Figure 38. Visitor registering at unstaffed trail registration station.

whole trees, small trees, and wood wastes; to improve the use and performance of wood products; to reduce costs and energy consumption; and to improve forest management and the environment through the effective use of wood. Examples of accomplishments are:

--The Forest Products Laboratory headed a joint USDA/EPA assessment of the benefits and exposure hazards of the major wood preservatives. The resulting report is now being used at EPA to decide on continued registration for the preservatives. Wood preservatives save at least \$6 billion a year by extending the life of wood.

--The Forest Service's recent invention of the Truss-Framed System for home construction has been made more accessible to builders through publication of a construction manual. Truss-framed houses cost much less than conventional wood-framed structures and provide better resistance to storms and earthquakes.

--One cause of wood decay--the action of fungi in breaking down lignin molecules--is better understood as the result of a breakthrough at the Forest Products Laboratory. Scientists there discovered that fungi "burn" the lignin outside their own cells--a unique phenomenon. This discovery advances the basic science of fungal physiology and contributes to improved applications of lignin breakdown in treating wastewater from pulp and paper mills.

--To reduce lumber-making costs, investigators have discovered and patented a new way to dry lumber: pressure steam-drying. With this process wood is dried at high pressures in superheated steam at lower cost than conventional kiln-drying and with minimal loss in lumber value.

--Scientists have developed techniques for estimating the weight and volume of the total tree and product components, including fuelwood, for the southern pines and important hardwood species. The techniques are being incorporated into the Forest Service's forest inventory program for area and regional assessments of total biomass.

Forest Engineering Research

The objective of this activity is to provide technology and economical and energy-efficient systems for forestry and land management operations including harvesting, regeneration, transportation, and environmental conservation. Examples of accomplishments are:

--Forest Service engineers working with the Tennessee Valley Authority have invented a new "topwood" harvester that compacts the tops of

trees by severing limbs and bundling this usable material for easy removal from the woods (figure 39). Since 50 million dry tons of usable residue in the form of treetops and limbs have been wasted annually in the past, a topwood harvester could quickly pay for itself.

--The Preliminary Logging Analysis System and Weak Link are new computer programs designed to hold down logging costs. The Preliminary Logging Analysis System rapidly generates cost-effective, thorough timber harvesting plans. Weak Link selects the proper number of machines and workers, determines best operating times for logging systems, and gives production and cost rates for each logging operation.

International Forestry

The objective of International Forestry is to provide leadership, coordination, and direction for Forest Service cooperation and participation in forestry worldwide. Examples of accomplishments are:

--The Forestry Support Program developed by the Forest Service and the U.S. Agency for International Development is now in its second year of operation. Its computerized system identifies the available forestry expertise for the world's major tropical forest areas. The

Forestry Support Program now has about 1,500 resumes in the system. During fiscal year 1982, more than 175 requests for technical expertise in forestry were filled for both short-term and resident assignments.

--In the United States/China Science and Technology Programs, U.S. teams on integrated forest pest management, forest genetics, and gypsy moth control visited China this year. The United States was host to three Chinese forestry teams during this period--one on forest fires, one on forest genetics and tree improvement, and one on forest inventory techniques.

--A significant event in scientific cooperation with Canada occurred June 25, 1982, when the Secretary of Agriculture, U.S. Department of Agriculture, and the Minister, Environment Canada, signed a memorandum of understanding to improve coordination on forestry-related programs between the two countries. Two supplementary memoranda of understanding were signed in August 1982 by the Chief of the Forest Service, U.S. Department of Agriculture, and the Deputy Minister, Canadian Forestry Service. These relate to cooperation in the mountain pine beetle program and light frame structures research.

--Forest Service headquarters and field units provided 6,657 person-days of training to foreign



Figure 39. Topwood harvester developed by Forest Service engineers working with the Tennessee Valley Authority.

nationals in 1982 sponsored by the U.S. Agency for International Development and the Food and Agriculture Organization of the United Nations. In addition, Forest Service units were host to 236 visitors from 49 foreign countries.

Forest Biomass Energy Program

The objective of this program is to coordinate Research, National Forest System, and State and Private Forestry activities to increase the productivity of forest lands through utilization of wood for energy. Use of logging residues, thinnings, and dead wood is economically practical and leads to greater productivity through increased growth and reduced losses to pests and fire. Examples of accomplishments are:

--The program provided technical information to long range research plans of the Department of Energy.

--Energy training programs were prepared for staff of National Forests and States. Use will begin early in 1983.

--The Forest Biomass Energy Program participated with the Forest Products Research Society in program development and selection of speakers for the Sixth International Industrial Wood Energy Forum.

--More than 3 million cubic feet of wood was used for fuel in 1982, in part because of the program's technology transfer services that promote the use of wood residues.

Administration

INTRODUCTION

Forest Service Administration manages activities which provide support to all of the agency's programs. These activities include accounting, procurement and property management, human resource programs, information and systems management, law enforcement, management of Forest Service owned facilities, civil rights, computer sciences and telecommunications, and personnel management. These and other administrative activities are essential to producing the goods and services provided by the Forest Service.

RECEIPTS AND EXPENDITURES

The Forest Service receives operating funds through the congressional appropriations process and from a variety of cooperator deposits. Receipts are generated from such Forest Service operations as timber sales, grazing fees, and mineral leases and permits.

Receipts for fiscal year 1982 totaled \$730 million, down from \$1.14 billion in 1981. This 36 percent drop was principally the result of a decline in the timber market. Expenditures totaled \$1.99 billion, down from \$2.26 billion in 1981 (figure 40, and tables 55, 56, 57, and 58).

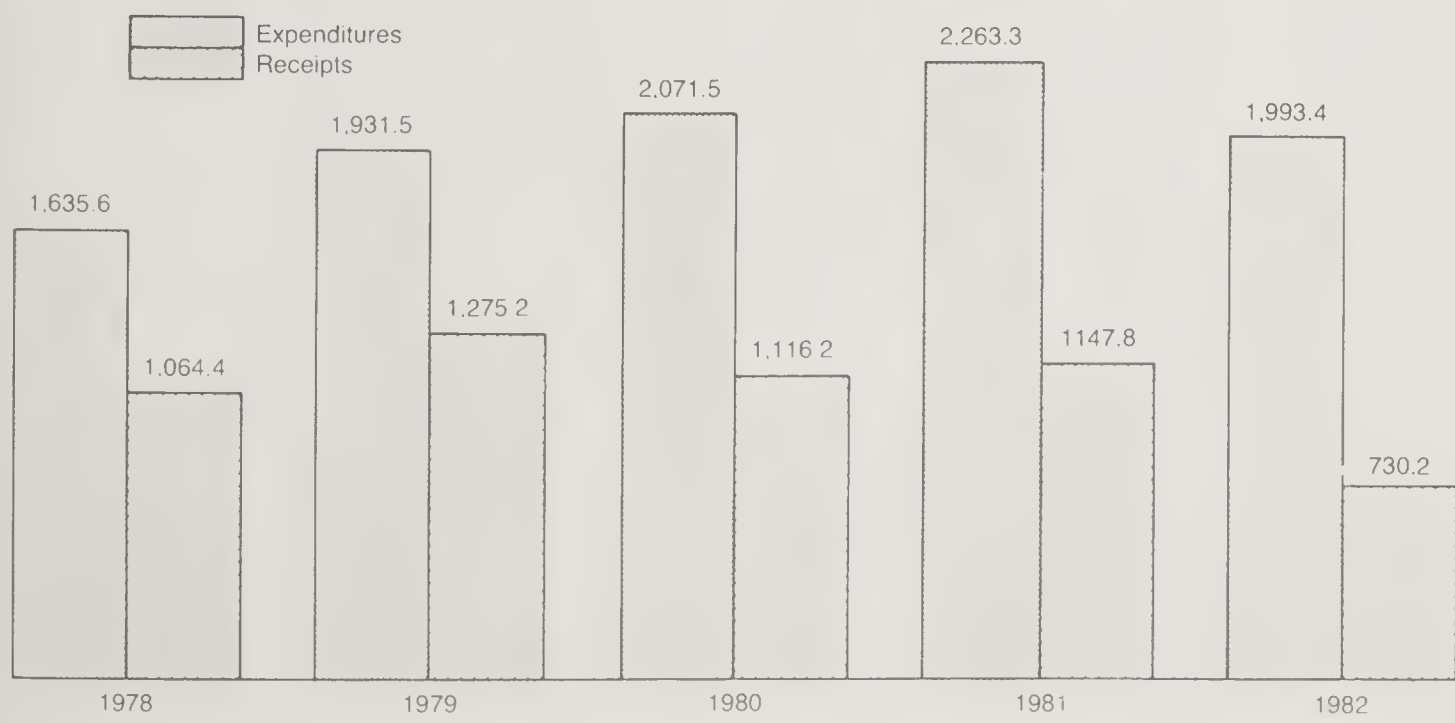
Timber receipts in the forms of cash, deposits, and roads in lieu of cash accounted for 73 percent, or \$529 million, of the total agency revenue in 1982. Receipts from mineral leases, royalties, sales, and bonus bids were the second largest source of revenue at 17 percent, or \$126 million, of total receipts. Other sources included recreation fees, land use permits, grazing fees, and royalties from the sale of Smokey Bear and Woodsy Owl products (figure 42).

Managing the National Forest System in 1982 required 80 percent of all Forest Service expenditures. Forest Research spent 6 percent, Human Resource Programs 4 percent, and State and Private Forestry 4 percent of the budget. Working Capital Fund, used to replace vehicles and heavy equipment, amounted to 6 percent of expenditures (figure 43).

The Forest Service, as required by law, pays the States 25 percent of the National Forest receipts. These funds are to be used for public schools and roads in counties containing National Forest System lands. In fiscal year 1982, the Forest Service paid \$230.4 million to the States from money received from National Forests in fiscal year 1981. A total of \$12.1 million was paid to counties from National Grasslands and Land Utilization Projects receipts in calendar

Figure 40

Expenditures and Receipts*
(Million Dollars)



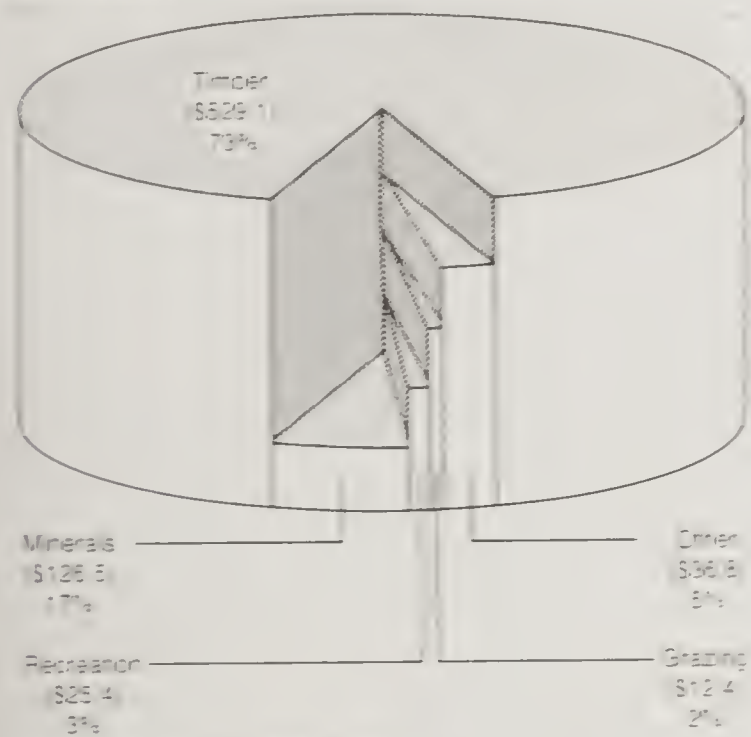
*See table 2, footnotes



Figure 41. Volunteer clearing brush on the Mt. Hood National Forest, Oregon. Photo by Roger Jensen, Portland, Oregonian.

Figure 42

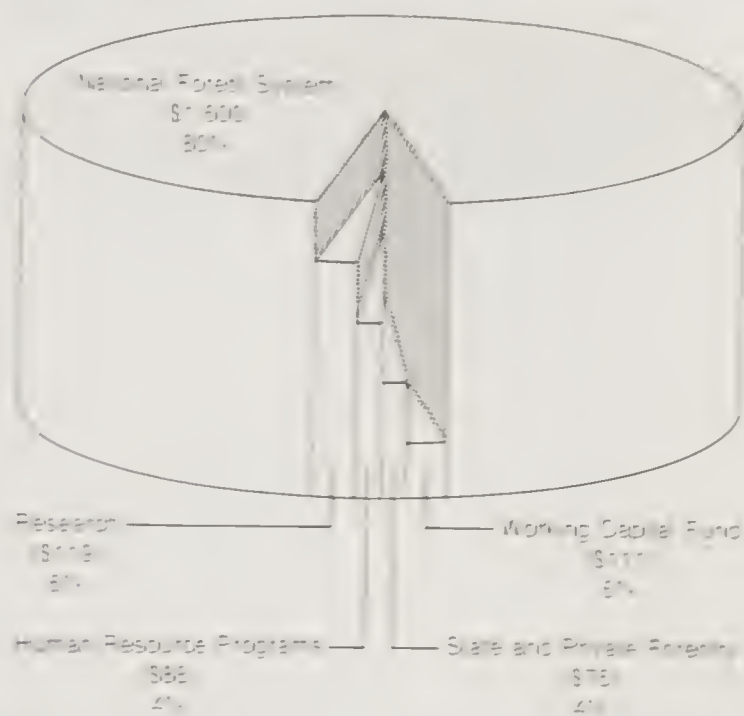
Distribution of Receipts by Program (Million Dollars)



Total 1982 receipts—\$730.2 million

Figure 43

Distribution of Expenditures by Program Area (Million Dollars)

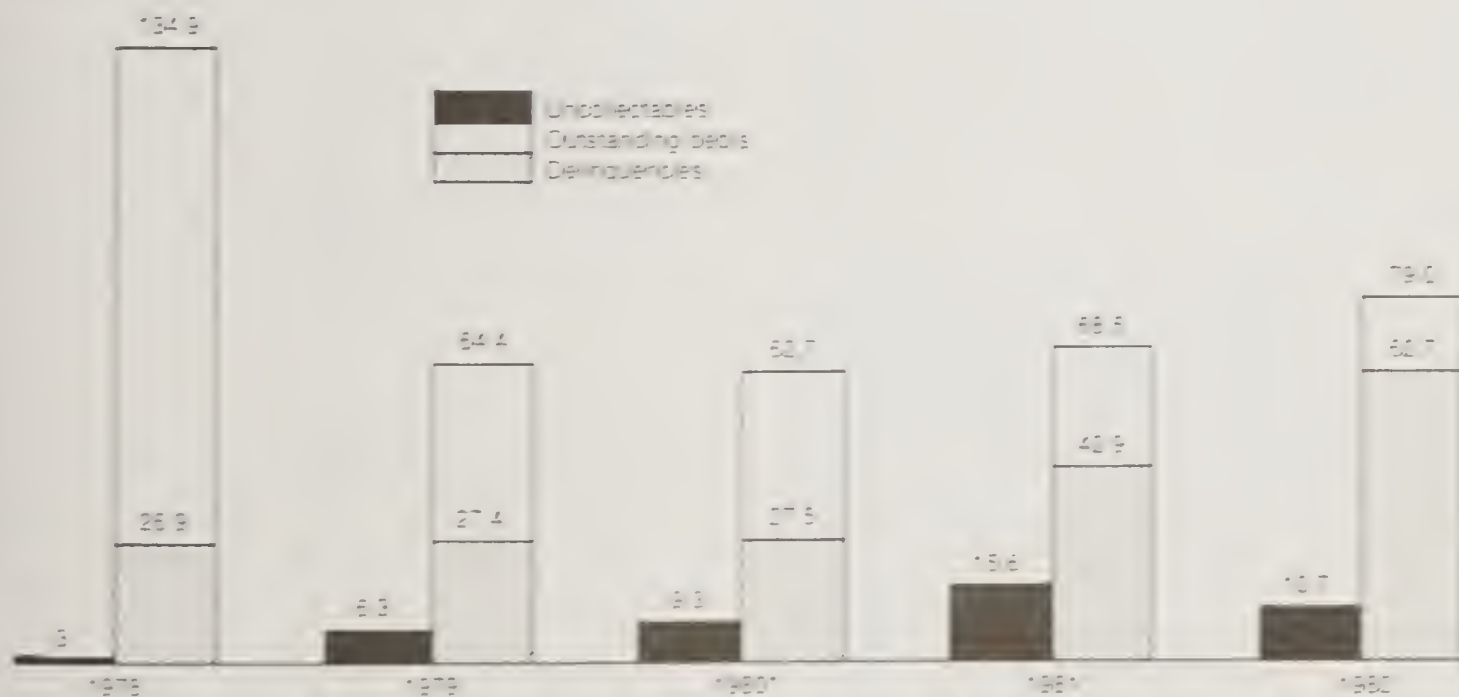


Total 1982 expenditures—\$1,993 million

Figure 44

Delinquencies, Uncollectables and Outstanding Debts (As of September 30 of Selected Years)

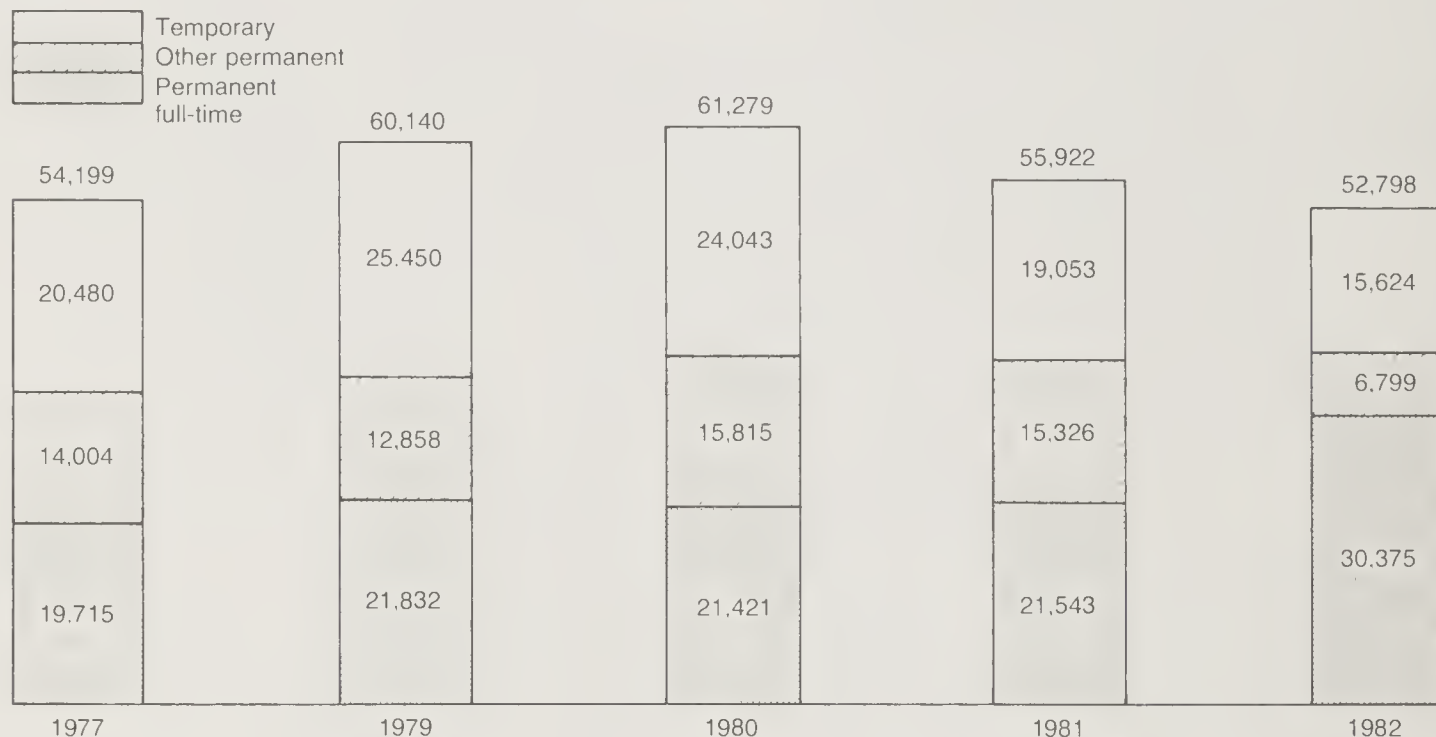
(Million Dollars)



*Adjusted to include data omitted in the 1981 Report of the Forest Service

Figure 45

**Distribution of Work Force by Tour of Duty
(As Reported in July of Selected Years)**
(Employees)



year 1981. In addition, Arizona received \$121,252 and Minnesota received \$710,799 under other statutes.

Collection of Overdue Debts

Figure 44 compares the total accounts receivable from the public, the amounts overdue, and the amounts written off as uncollectable for the last 5 years.

PERSONNEL

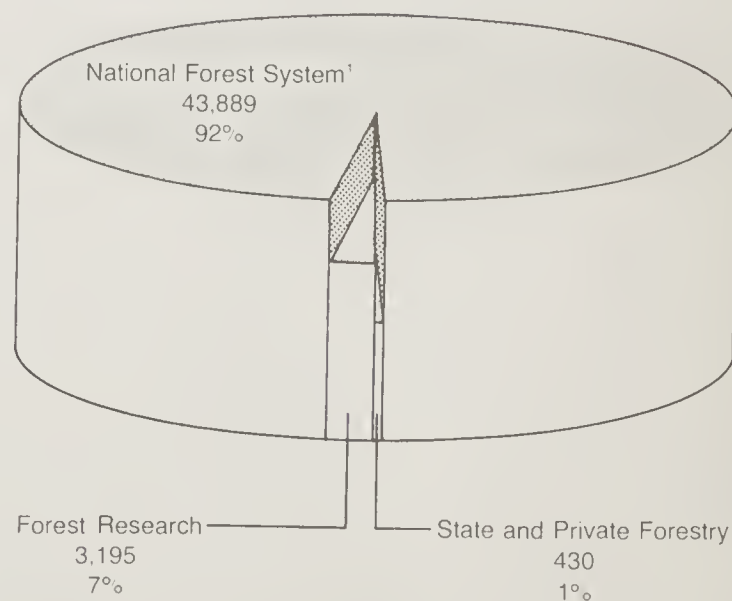
Forest Service employees were fewer in number in fiscal year 1982 than in 1981. Peak employment (July) fell from 55,922 in 1981 to 52,798 in 1982 (figure 45). The number of full-time equivalent/staff years for fiscal year 1981 was 45,423. For fiscal year 1982 it was 42,984--a decrease of 2,439 staff years, and a 5 percent reduction from 1981.

The agency's work force is heavily concentrated in the National Forest System, which employs 92 percent of the employees. Research has 7 percent and State and Private Forestry has less than 1 percent of the work force (figure 46).

Thirty-six percent or 11,443 employees fill professional occupations which constitutes the

Figure 46

Distribution of Total Work Force by Program Area
(Number of Employees as of September 30, 1982)



¹Includes Office of Information, Programs and Legislation, and Administration

largest category of permanent full-time employees. Technical employees rank a close second with 11,032 or 35 percent of the permanent full-time work force. Foresters and civil engineers are still the largest professional occupations, and their counterparts, forestry technicians and engineering technicians, are the largest groups of technicians.

HUMAN RESOURCE PROGRAMS

The goal of Human Resource Programs is to blend human and natural resources. They provide employment and training opportunities while assisting the Forest Service in its mission of managing and protecting the Nation's renewable resources. During fiscal year 1982, \$89.8 million was allocated to the Forest Service to operate three major programs: Job Corps, Senior Community Service Employment Program, and Young Adult Conservation Corps. In addition, the agency used \$1.6 million of National Forest System funds to operate a Youth Conservation Corps program during the summer. The Forest Service also expanded its volunteer program (table 61).

Accomplishments included campground and trail construction, tree planting, fence building, firefighting, timber stand improvement, and clerical support.

Volunteers in the National Forests

Volunteers in the National Forests is an increasingly popular program for people from many walks of life. The program provides an unlimited opportunity for individuals to donate their time to assist in the management of our natural resources. The popularity of the program is emphasized by the more than twofold increase in participants from 1981 to 1982.

During fiscal year 1982, 42,570 persons participated in the volunteers program. Participants contributed 1,238 person-years of work valued at approximately \$15 million to this unfunded program (figures 47 and 48).

Job Corps

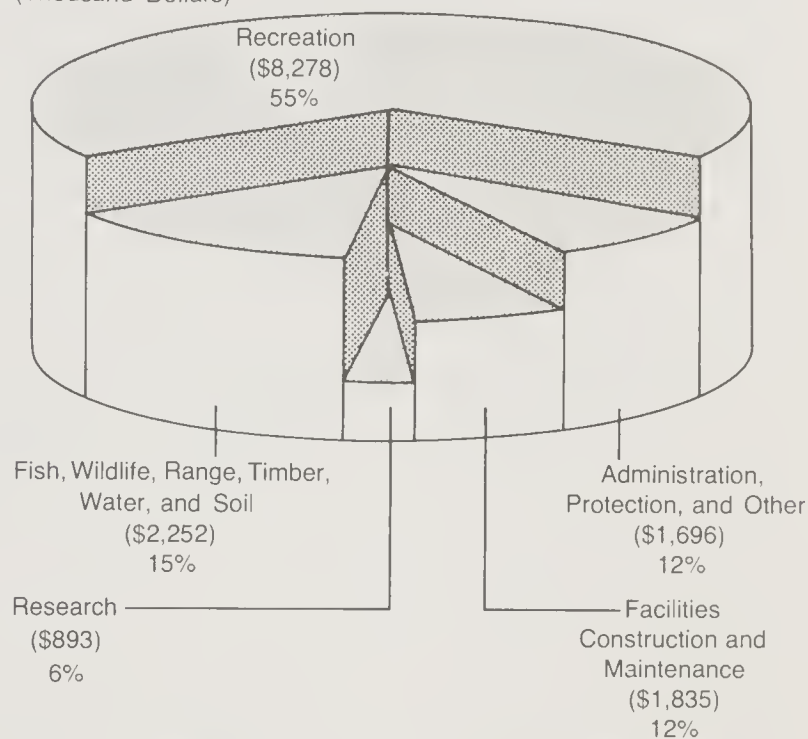
The Job Corps is a Department of Labor program with 18 Civilian Conservation Centers administered by the Forest Service under an interagency agreement.

A total of \$53.3 million was received in fiscal year 1982 to serve 8,780 youth (59 percent minorities and 8 percent women). The skills training resulted in 3,676 person-years of work valued at \$15.4 million.

Figure 47

Volunteer Program—Value of Work Accomplished By Resource Area

(Thousand Dollars)



Total value of work accomplished—\$15.0 million

The primary purpose of the centers is to produce graduates who are able to find productive work, re-enter school, or join the military. In fiscal year 1982, 84 percent of Job Corps graduates were successful in one of these three endeavors.

Senior Community Service Employment Program

The Forest Service, in cooperation with the Department of Labor, sponsors the Senior Community Service Employment Program, which is authorized under Title V of the Older Americans Act.

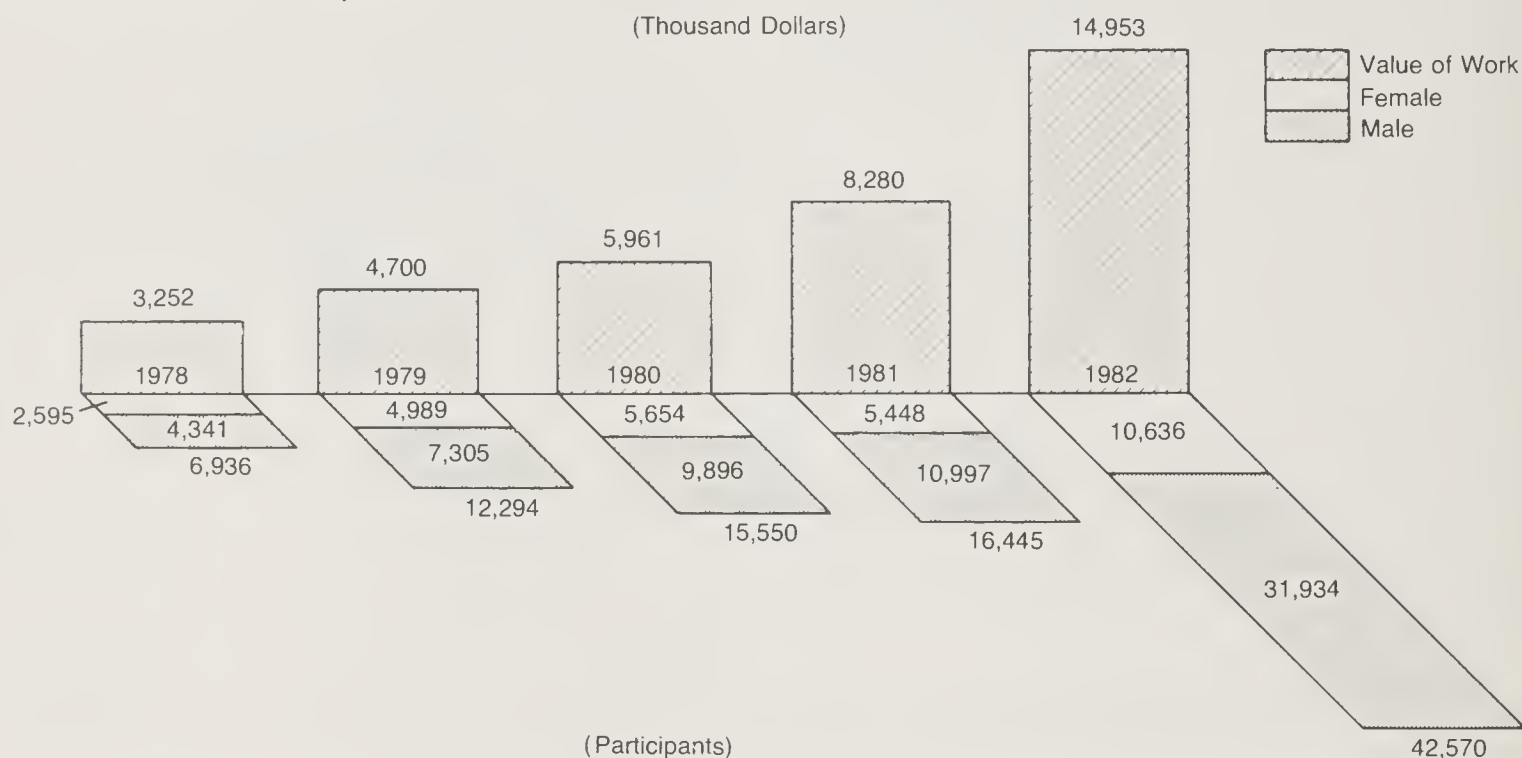
The Forest Service's interagency agreement for July 1, 1981, to June 30, 1982, provided \$16.2 million with which 4,288 persons were aided (19 percent minorities and 31 percent women). They did 2,132 person years of work valued at \$22.8 million. This meant the Government reaped a return of \$1.41 for each dollar invested. Between July 1, 1982, and June 30, 1983, it is anticipated that 4,600 seniors will be employed with funding of \$16.8 million.

Youth Conservation Corps

The Youth Conservation Corps is a summer employment program for men and women, 15 through 18, who work, learn and earn together by doing

Figure 48

Volunteer Program—Number of Participants and Value of Work Accomplished



projects that further the development and conservation of natural resources.

The Forest Service operated a \$1.6 million program this summer in Regions 4, 5, 6, 8, 9, and 10, serving 1,006 young people (17 percent minorities and 43 percent women). They accomplished 164 person years of work valued at \$1.9 million with a \$1.18 return for each dollar invested.

Young Adult Conservation Corps

The Young Adult Conservation Corps has provided year-round, labor-intensive conservation work to persons 16 to 23 who are unemployed and out of school.

The Forest Service operated a \$20.3 million program in fiscal year 1982, providing employment for 8,555 enrollees (27 percent minorities and 33 percent women). They accomplished 2,878 person years of work valued at \$25.2 million with a \$1.25 return for each dollar invested.

Because authorization for the Young Adult Conservation Corps program expired on September 30, all enrollees were officially terminated by August 28, 1982.

Hosted Programs

The Forest Service also serves as a host for cooperative programs administered by State and local governments. These include college work study, vocational work study, work incentive, and programs authorized by the Comprehensive Employment and Training Act. During the 1982 fiscal year, 8,014 persons participated in these programs, (32 percent minorities and 27 percent women) doing 723 person-years of work worth \$7.8 million.

OTHER PROGRAMS

Civil Rights

The purpose of the Forest Service's Civil Rights program is to ensure equal opportunity and equal access to employment, programs, and activities for minorities and women. The agency is to carry out the intent of the 1964 Civil Rights Act, as amended, and the Department of Agriculture Title 9 administrative regulations.

The Forest Service had 4,103 minority employees in fiscal year 1982, constituting 11 percent of the total work force. A total of 10,690 women was employed, which was 29 percent of the work force.

The Forest Service achieved 99 percent of its total equal employment opportunity placement goals. The agency exceeded its placement goal for women in professional positions by 3 percent, and for women in administrative positions by 5 percent

REORGANIZATION

In an effort to reduce costs and streamline operations, the Regional Foresters undertook major reorganizational efforts in fiscal year 1982. The Southeastern Area State and Private Forestry Office was consolidated with the Office

of the Regional Forester, Southern Region. Implementation of these reorganizational plans will eliminate 245 positions and save \$7.4 million annually.

A study in fiscal year 1981 resulted in the elimination of headquarters staffs with overlapping responsibilities. In addition, an Information Systems Staff was established and an Information Resources Management program was developed. These actions are helping the agency to carry out the requirements of the Paperwork Reduction Act of 1980.

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STATE AND PRIVATE
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Table 1.--Summary of National Forest System accomplishments compared to RPA and funded output levels--fiscal year 1982

Resource Area	Activity	Unit of measure 1/	RPA Goal	Output level		Accomplishment comparison	
				Funded	Accomplished	Percent of RPA	Change from funded level
Resource:	Recreation						
	Wilderness						
	Wildlife						
	and fish						
	Range						
	Timber						
	Visitor use	MM RVD's	232	230	233.4	101	+3.4
	Maintenance	MM acres	33	25.1	25.1	76	0
	Habitat improvement	M acres	579	375 2/	300 2/	52	-75
	Permitted grazing use	MM AUM's	9.9	9.8	9.9	100	+0.1
Soil and water	Sales offering	B bd.ft.	11.9	11.0	11.1	93	+0.1
	Silvicultural exams	MM acres	-- 3/	6.8	7.3	--	+0.5
	Reforestation						
	Appropriated funds	M acres	216.0	206.0	221.6	103	+15.6
	K-V funds	M acres	247.0	167.0	161.2	65	-5.8
	Timber stand improvement						
	Appropriated funds	M acres	270.0	180.0	240.2	89	+60.2
	K-V funds	M acres	142.0	137.0	120.8	85	-16.2
	Resource improvement	M acres	28,000	7,061	7,720	28	+659
	Leases and permits	Operating plans	20,219	21,963	29,400	145	+7,437
Minerals							
	Trail construction/reconstruction	Miles	2,331	318.4	365.5	16	+47.1
	Road construction						
	Appropriated funds--RPA goal	Miles	624	22 4/	22 4/	3	0
	Appropriated funds--less RPA mileage	Miles	--	1,108	1,845	--	+737
	Purchaser credit	Miles	--	8,879	6,864 5/	--	2,015
	Fuel management	M acres	306	312.5	336.3 6/	110	+23.8
	Land acquired						
	Purchase and donation	M acres	222	108.9	130.8	59	+21.9
	Exchanges	M acres	--	82.6	161.5	--	+78.9
Support:	Landline location	M miles	6,423	5,443	5,875	91	+432

1/ M = thousand, MM = million, B = billion.

2/ Includes Knutson-Vandenberg acres.

3/ -- = not applicable, goals for these items were not included in the RPA.

4/ Does not include road mileage constructed or planned for construction in support of the timber program.

5/ Accomplishment includes 1,252 miles turned back to Forest Service for construction.

6/ An additional 10,988 acres were accomplished through human resource programs and 538,660 acres using brush disposal funds.

Table 2.--National Forest System funding--fiscal years 1980-82

1982					
	Actual	Percent			
		RPA 1/ 1,000 constant 1982 dollars	of RPA	1981 1/ 1,000 constant 1982 dollars	1980 1/ 1,000 constant 1982 dollars
Land and resource protection:					
Minerals area management	18,691	21,882	85	16,283	14,338
Land management	20,636	30,207	68	22,047	21,215
Landline location	25,011	33,577	74	27,191	19,910
Maintenance of facilities	11,833	15,005	79	12,364	11,727
Forest fire protection	142,235	158,900	90	151,392	146,491
Fighting forest fires 2/	69,004	4,275	104	111,887	108,331
Cooperative law enforcement	3,734	7,720	48	4,733	4,198
Forest road maintenance	65,286	86,587	75	67,034	66,268
Forest trail maintenance	11,312	15,554	73	12,045	10,694
Subtotal 2/	367,742	373,707	81	424,976	403,172
Renewable resource management and utilization:					
Sales administration and management	159,836	184,905	86	166,835	161,340
Reforestation and stand improvement	95,611	95,765	100	88,964	92,534
Recreation use	91,180	120,452	76	95,886	96,014
Wildlife and fish habitat management	33,136	55,322	60	33,845	35,881
Range management	27,287	33,674	81	27,432	32,687
Soil and water management	32,015	41,881	76	32,789	43,702
Subtotal	439,065	531,999	82	445,751	462,158
General administration	242,290	267,478	91	286,595	299,149
Mount St. Helens	-- 3/	--	--	14,423	29,350
Construction and land acquisition:					
Construction of facilities	17,853	37,647	47	20,903	31,608
Forest road construction	236,204	244,487	97	170,932	152,905
Forest trail construction	4,038	19,360	21	3,694	7,741
Forest roads purchaser construction 4/	(242,542)	(285,131)	85	(225,330)	(265,412)
Land acquisition, Weeks Act	0	7,048	0	2,698	2,369
Mount St. Helens	--	--	--	24,257	--
Chugach Natives, Inc. 5/	3,000	--	--	--	--
Subtotal	261,095	308,542	85	222,484	194,623

See footnotes at end of table.

Table 2.--National Forest System funding--fiscal years 1980-82--Continued

	1982			
	Actual	Percent		1980 1/ 1981 1/ 1982 1/
		RPA 1/ 1,000 constant 1982 dollars	of RPA	
Land acquisition 4/ Youth conservation corps 6/ Acquisition of lands for National Forests, special acts Acquisition of lands to complete land exchange	26,262 0 724 151	-- 3/ 0 754 446	-- -- 96 34	-- -- 809 571
Range betterment	6,583	6,500	101	7,447
Permanent appropriations	365,454	508,142	72	464,065
Trust funds	104,804	113,095	93	164,668
Total	1,814,170	2,110,663	83 7/	2,031,789
				2,184,780

- 1/ In order that a comparison may be made with 1982, general administration has been eliminated from individual line items and is shown as a separate entry.
- 2/ Includes supplemental appropriations; percentage of RPA calculated without supplemental appropriations.
- 3/ -- = not applicable.
- 4/ This account was taken off budget in 1982. For comparison, the amounts are shown as non-add items.
- 5/ New account in 1982.
- 6/ Account transferred to the Department of the Interior in 1981; total program level for 1981--\$60 million, and 1982--no appropriation.
- 7/ Excludes supplemental fire appropriations and Chugach Natives, Inc.

Table 3.--Planned and approved minerals operating plans by Region--fiscal year 1982

Region	Plans		
	RPA Goal	Planned	Accomplished
Northern	2,407	3,522	3,643
Rocky Mountain	1,635	1,832	2,850
Southwestern	1,447	1,488	3,023
Intermountain	2,600	2,717	3,148
Pacific Southwest	1,920	1,774	2,272
Pacific Northwest	5,865	2,732	5,402
Southern	2,950	3,601	4,040
Eastern	1,205	3,954	4,302
Alaska	190	343	725
Total	20,219	21,963 <u>1/</u>	29,405

1/ 21,777 was original 1982 target allocations;
21,963 includes mid-year adjustments.

Table 4.--Energy mineral workload and production--fiscal years 1979-82

Fiscal Year	Acres under lease <u>1/</u>	Energy-related operating plans	Energy-related operating plan backlog	Oil production	Gas production	Coal production
	Millions			Barrels	1,000 cubic feet	tons
1979	24.9	9,801	6,000	11,130,200	213,250,000	6,240,000
1980	25.0	13,980	7,300	12,200,000	213,800,000	7,100,000
1981	25.2	15,037	5,200	13,350,000	214,100,000	12,400,000
1982 <u>1/</u>	25.0	16,380	7,200 <u>2/</u>	13,000,000	214,000,000	13,000,000

1/ All figures are estimated.

2/ Estimate includes 3,300 unprocessed lease applications in congressionally designated wilderness and wilderness study areas, RARE II recommended wilderness areas, and RARE II further planning areas.

Table 5.--Land acquisition and exchange--fiscal year 1982

	Acres	Cases	Value
			million dollars
Purchase	10,224	94	10.9
Exchange	161,540	208	115.7
Donation	120,575	72	N/A <u>1/</u>
Total	292,339	374	126.6

1/ N/A = not available.

Table 6.--Miles of landline location by Region--fiscal year 1982

Region	Total boundary	1982 target	1982 accomplishment	Accomplished to date
Northern	30,664	475	527	3,090
Rocky Mountain	51,433	318	318	1,957
Southwestern	19,991	183	195	3,997
Intermountain	28,659	165	180	2,243
Pacific Southwest	29,500	830	878	4,300
Pacific Northwest	23,463	1,442	1,681	6,847
Southern	42,124	1,400	1,400	28,836
Eastern	42,642	569	594	3,415
Alaska	2,042	61	102	525
Total	270,518	5,443	5,875	55,210

Table 7.--Lands administered by the Forest Service as of September 30, 1982

State, Commonwealth, or Territory 1/	National Forests, pur- chase units, research areas, and other areas	National Grasslands Acres	Land Utilization Projects	Total
Alabama	644,551	0	40	644,591
Alaska	23,119,525	0	0	23,119,525
Arizona	11,271,890	0	0	11,271,890
Arkansas	2,478,865	0	0	2,478,865
California	20,393,822	0	19,222	20,413,044
Colorado	13,818,733	611,947	560	14,431,240
Connecticut	10	0	0	10
Florida	1,098,587	0	0	1,098,587
Georgia	856,053	0	9,340	865,393
Hawaii	1	0	0	1
Idaho	20,379,787	47,658	0	20,427,445
Illinois	261,588	0	0	261,588
Indiana	187,928	0	324	188,252
Kansas	0	108,337	0	108,337
Kentucky	673,271	0	0	673,271
Louisiana	597,769	0	0	597,769
Maine	50,977	0	260	51,237
Michigan	2,755,432	0	999	2,756,431
Minnesota	2,799,782	0	0	2,799,782
Mississippi	1,141,379	0	0	1,141,379
Missouri	1,454,922	0	13,104	1,468,026
Montana	16,764,352	0	0	16,764,352
Nebraska	257,409	94,332	0	351,741
Nevada	5,149,764	0	0	5,149,764
New Hampshire	705,647	0	0	705,647
New Mexico	9,211,036	136,412	240	9,347,688
New York	0	0	13,232	13,232
North Carolina	1,213,568	0	0	1,213,568
North Dakota	796	1,104,749	0	1,105,545
Ohio	177,035	0	0	177,035
Oklahoma	247,812	46,300	0	294,112
Oregon	15,510,232	106,138	856	15,617,226
Pennsylvania	510,558	0	0	510,558
Puerto Rico	27,846	0	0	27,846
South Carolina	609,702	0	0	609,702

See footnote at end of table.

Table 7. --Lands administered by the Forest Service as of September 30, 1982--Continued

State, Commonwealth, or Territory 1/	National Forests, pur- chase units, research areas, and other areas	National Grasslands Acres	Land Utilization Projects	Total
South Dakota	1,134,706	863,071	0	1,997,777
Tennessee	625,348	0	0	625,348
Texas	665,066	117,554	0	782,620
Utah	8,045,959	0	0	8,045,959
Vermont	293,883	0	0	293,883
Virgin Islands	147	0	0	147
Virginia	1,627,539	0	0	1,627,539
Washington	9,053,011	0	725	9,053,736
West Virginia	971,334	0	0	971,334
Wisconsin	1,501,949	0	160	1,502,109
Wyoming	8,681,993	572,372	0	9,254,365
Total	186,971,564	3,808,870	59,062	190,839,496

1/ States not listed have no lands administered by the Forest Service.

Table 8.--Fuels treatment acreage accomplished by appropriation--fiscal year 1982

Region	RPA Goal	Target (Forest fire protection funds)	Forest fire protection funds	Accomplishment		Total
				Human resource funds	Brush disposal funds	
Northern	32,500	8,130	10,088	480	26,000	36,568
Rocky Mountain	37,600	9,600	9,940	0	9,040	18,980
Southwestern	42,400	19,600	19,278	1,956	73,400	94,634
Intermountain	18,300	19,836	19,964	354	43,400	63,718
Pacific Southwest	46,600	31,000	43,434	1,926	40,000	85,360
Pacific Northwest	28,200	15,400	20,874	4,711	342,700	368,285
Southern	97,300	204,100	207,507	625	0	208,132
Eastern	3,100	4,816	5,214	936	4,120	10,270
Total	306,000 <u>1/</u>	312,482 <u>2/</u>	336,299 <u>3/</u>	10,988	538,660	885,947

1/ Does not include maintenance acres. For accomplishment comparison use "Total" less maintenance acres (885,947 - 202,299 = 683,648).

2/ Includes both investment (119,000 acres) and maintenance (193,482 acres).

3/ Includes both investment (134,000 acres) and maintenance (202,299 acres).

Table 9.--Timber offered, sold, and harvested--fiscal years 1978-82

	1982 <u>1/</u>	1981	1980	1979	1978
Offered:					
Volume (billion board feet)	11.1	12.2	12.4	12.4	12.2
Sold:					
Number of sales	143,705	92,041	89,304	64,129	54,335
Volume (billion board feet)	10.0	11.5	11.3	11.3	11.0
Value (million dollars) <u>2/</u>	614	1,768	1,949	1,964	1,328
Harvested:					
Volume (billion board feet)	6.7	8.0 <u>1/</u>	9.2	10.4	10.1
Value (million dollars) <u>3/</u>	340	721	730	968	854

1/ Preliminary.

2/ This is one high bid value from all sales sold and includes stumpage, cost of reforestation, stand improvement, brush disposal, timber salvage, road maintenance and the road costs for roads to be built by the purchaser.

3/ This is the current stumpage rate for the actual volume removed and includes the reforestation, and stand improvement costs. Timber salvage and brush disposal values, and road costs are not included.

Table 10.--Timber offered, sold, and harvested by Region--fiscal years 1980-82

	1982			1981			1980		
	Offered	Sold 1/	Harvested 2/	Offered	Sold	Harvested	Offered	Sold	Harvested
	Million board feet								
Northern	1,027.8	974.0	716.6	1,145.0	994.3	783.9	1,192.3	1,133.2	835.6
Rocky Mountain	389.8	351.5	250.0	401.3	403.9	273.9	411.2	323.5	250.0
Southwestern <u>3/</u>	377.5	331.2	176.2	464.2	409.8	310.9	443.2	334.7	365.4
Intermountain <u>3/</u>	413.6	348.0	261.6	424.3	314.8	323.4	456.7	363.8	306.2
Pacific Southwest	1,638.6	1,588.4	918.5	1,849.0	1,830.2	1,229.2	1,915.2	1,921.0	1,450.3
Pacific Northwest	4,856.8	4,641.6	2,525.4	5,488.1	5,482.1	3,125.9	5,377.4	5,126.4	3,628.7
Southern	1,201.6	1,124.9	816.3	1,240.5	1,219.3	1,141.1	1,331.3	1,281.6	1,297.8
Eastern	689.6	589.4	609.5	688.3	643.7	559.3	728.3	606.2	562.6
Alaska <u>3/</u>	522.5	80.6	473.2	546.2	158.7	288.6	579.3	199.6	481.6
Total	11,117.8	10,029.6	6,747.3	12,246.9	11,456.8	8,036.2	12,434.9	11,290.0	9,178.2

1/ Does not include the volume of long-term sales released for harvesting.

2/ Includes the volume harvested on long-term sales.

3/ Includes long-term sales volume prepared in the offered column.

Table 11.--Number of sales, volume, and value of timber sold on National Forest lands by size class--fiscal year 1978-82

	Value of Sale										Total Less Non- Convertibles 2/
	To \$300	\$301 - \$2,000	\$2,001 - 2,000,000	\$2,001,000 - 5,000,000	\$5,001,000 - 15,000,000	\$15,001,000 and over	Non-Con- vertibles 1/				
1978											
Number of Sales	48,339	2,678	2,046	608	545	119	217,932				54,335
Volume (MBF)	253,162	269,017	1,311,120	1,979,631	4,626,037	2,556,764	0				10,995,731
Value (\$1,000)	1,510.1	5,977.2	99,810.3	178,698.5	655,238.4	387,180.0	2,763.8				1,328,414.6
1979											
Number of Sales	57,241	3,404	2,205	581	596	102	185,562				64,129
Volume (MBF)	285,391	377,749	1,503,917	1,960,737	5,120,541	2,082,032	0				11,330,367
Value (\$1,000)	1,923.3	8,804.6	145,430.7	250,125.1	1,079,092.7	477,247.7	965.1				1,962,624.1
1980											
Number of Sales	81,072	4,715	2,252	590	596	79	183,360				89,304
Volume (MBF)	406,276	569,131	1,494,286	1,764,723	5,421,220	1,634,396	0				11,290,032
Value (\$1,000)	3,175.5	10,126.5	125,231.0	220,310.8	1,254,629.7	335,184.5	1,256.7				1,948,658.0
1981											
Number of Sales	84,675	3,952	2,114	556	640	104	213,091				92,041
Volume (MBF)	359,040	427,385	1,314,813	1,791,408	5,602,699	1,961,455	0				11,456,800
Value (\$1,000)	2,913.2	8,823.3	113,111.7	206,064.3	1,077,314.0	359,522.8	1,624.1				1,767,749.4
1982											
Number of Sales	131,498	8,805	2,223	605	500	92	216.9				143,723
Volume (MBF)	441,078	415,776	1,358,642	1,881,008	4,266,677	1,666,455	0				10,029,636
Value (\$1,000)	3,580.3	8,365.4	82,587.9	139,849.1	292,693.0	87,112.2	1,755.2				614,187.9

1/ Non-convertible products include Christmas trees, cones, burls, et cetera.

2/ Rows may not add due to rounding.

Table 12.--Timber sold and harvested by State--fiscal year 1982 ^{1/}

State or ^{2/} Commonwealth	Timber sold			Timber harvested ^{3/}	
	Sales	Volume	Value ^{4/}	Volume ^{5/}	Value ^{4/}
		MBF ^{6/}	dollars	MBF	dollars
Alabama	189	72,115	5,299,063	61,128	4,883,605
Alaska	139	80,635	2,380,991	473,160	4,955,493
Arizona	9,769	230,012	9,637,531	107,912	3,744,722
Arkansas	1,326	164,348	13,437,068	76,865	4,972,277
California	26,764	1,591,365	88,751,934	918,476	47,706,551
Colorado	14,599	200,983	1,194,816	123,614	825,447
Florida	120	95,550	6,269,021	85,178	4,191,808
Georgia	395	47,306	2,356,961	40,134	2,393,336
Idaho	23,200	691,831	19,134,746	503,283	7,134,402
Illinois	47	7,232	286,610	11,048	317,431
Indiana	63	11,455	606,182	7,639	410,012
Kentucky	325	24,887	431,548	20,120	420,767
Louisiana	341	130,072	10,366,083	73,744	5,015,126
Maine	21	12,225	269,630	11,336	291,500
Michigan	774	160,616	3,222,986	161,758	2,777,941
Minnesota	293	123,316	1,280,068	122,985	1,237,183
Mississippi	646	200,444	21,142,546	142,367	14,354,339
Missouri	991	52,860	1,525,073	55,547	2,189,968
Montana	2,864	523,228	17,643,014	378,689	8,142,175
Nebraska	1	176	354	0	0
Nevada	1,230	8,681	171,284	1,811	28,515
New Hampshire	58	28,207	455,900	27,423	425,757
New Mexico	18,878	101,189	1,103,487	68,332	1,903,013
New York	13	332	16,148	296	13,587
North Carolina	1,531	73,966	2,114,877	46,153	1,276,217
North Dakota	4	13	87	0	0
Ohio	52	6,568	168,918	8,438	336,597
Oklahoma	114	31,778	2,806,028	33,109	2,069,085
Oregon	7,764	3,351,296	305,120,231	1,750,260	143,478,624
Pennsylvania	133	49,613	5,176,043	55,813	4,682,073
South Carolina	279	101,400	9,007,252	114,196	9,519,972
South Dakota	142	71,786	409,349	69,759	631,213
Tennessee	347	33,553	720,401	26,911	463,891
Texas	484	92,828	11,175,879	49,485	5,572,260
Utah	21,612	63,866	402,488	67,220	628,605
Vermont	176	9,584	210,602	12,167	335,823
Virginia	722	56,453	579,578	44,622	500,920
Washington	4,200	1,302,436	66,332,200	785,651	48,073,491
West Virginia	302	25,578	922,466	27,586	863,267
Wisconsin	293	101,971	1,412,506	109,742	1,690,422
Wyoming	2,522	97,882	645,975	73,303	757,574
Total	143,723	10,029,636	614,187,924	6,747,260	339,214,991

^{1/} Excludes non-convertible products such as Christmas trees, cones, burls, et cetera.^{2/} States not listed had no timber sold or harvested in fiscal year 1982.^{3/} Preliminary.^{4/} Includes Knutson-Vandenberg and salvage sale receipts.^{5/} Included in volume harvested are adjustments for fiscal years 1981 and 1982.^{6/} MBF = thousand board feet.

Table 13.--Uncut timber volume under contract by Region--fiscal years 1978-82

Region	1982 <u>1/</u>	1981	1980	1979	1978
	Million board feet <u>2/</u>				
Northern	3,634	3,325	3,194	2,952	2,936
Rocky Mountain	1,157	1,057	1,034	885	891
Southwestern	1,150	995	846	842	800
Intermountain	890	750	942	913	1,007
Pacific Southwest	6,563	5,884	5,835	5,150	5,125
Pacific Northwest	18,125	16,295	14,446	13,943	12,486
Southern	2,296	1,988	1,910	1,926	2,231
Eastern	1,917	1,937	1,945	1,830	1,810
Alaska	365	440	344	251	601
Total	36,097 <u>3/</u>	32,671	30,496	28,692	27,887

1/ All long-term sales total an additional 10,410 million board feet.

2/ Volume in local scale with long-term sales removed.

3/ The value of the current uncut volume under contract as of October 1, 1982, is \$4,488 million.

Table 14.--Timber funding--fiscal years 1980-82 ^{1/}

	1982	1981 ^{2/}	1980 ^{2/}
	<u>Million dollars</u>		
National Forest System			
Timber management	114.4	109.9	106.7
Harvest administration	44.1	45.6	30.7
Reforestation and stand improvement	94.3	82.9	78.8
Timber support	77.0	45.4	39.4
Subtotal	329.8	283.8	255.6
Road Construction			
Forest Service construction	232.9	159.3	130.2
(A) Purchaser construction	(242.5)	(210.0)	(226.1)
Purchaser construction by the Forest Service	40.2	44.9	52.7
Subtotal	273.1	204.2	182.9
(B) Total, appropriated accounts	602.9	488.0	438.5
Special Accounts			
(C) Brush disposal	29.6	43.8	40.5
(D) Timber salvage sales	6.8	11.9	14.5
Tongass timber supply fund	42.0	23.3	-- ^{3/}
(E) Knutson-Vandenberg program	99.9	92.8	75.0
Subtotal	178.3	171.8	130
Total	781.2	659.8	568.5

^{1/} Letters preceding line items may be used with corresponding letters in Table 15 for a funding/receipts comparison.

^{2/} General administration has been removed for comparability purposes.

^{3/} -- = Not applicable.

Table 15.--Timber receipts--fiscal years 1980-82 ^{1/}

	1982	1981 ^{2/}	1980
	<u>Million dollars</u>		
(A) Value of roads built by timber purchasers in lieu of cash	(164.1)	(189.6)	(164.2)
(B) Sale and use of timber and forest products	251.0	581.4	625.4
(C) Brush disposal	29.6	43.8	42.4
(D) Timber salvage sales	6.8	11.9	14.5
(E) Timber sale area betterment	77.6	124.9	116.6
Total	365.0	762.0	798.9

^{1/} Letters preceding line items may be used with corresponding letters in Table 14 for a funding/receipts comparison.

^{2/} Adjusted to reflect increase in receipts received after the 1981 Report of the Forest Service was published.

Table 16.--Timber sale costs and returns for selected timber sales--fiscal year 1982

	Group 1/				
	One	Two	Three	Four	Five
Region	Eastern	Northern	Rocky Mtn.	Eastern	Southwestern
National Forest	Green Mtn.	Idaho	Routt	Ottawa	Lincoln
Sale	Piper Brook	Big Hope	Onion Park	Elbo Lake	Seep
Volume Sold (MBF) <u>2/</u>	560	3,930	5,800	1,084	2,100
Government costs (1,000 dollars):					
Timber preparation	10.6	27.1	115.1	18.1	33.2
Transportation system	.9	14.9	373.0	0	12.7
Other resources	.7	7.0	7.9	3.0	14.9
Total	12.2	49.0	496.0	21.1	60.8
Returns to Government (1,000 dollars):					
Stumpage receipts (including stand improvement)	38.3	209.7	2.9	45.3	1.1
Deposits	0	59.3	8.7	1.3	18.1
Value of constructed road access	0	63.6	179.3	0	56.0
Total	38.3	332.6	190.9	46.6	75.2
Average per MBF:					
Expenditures	21.78	12.47	85.52	19.46	28.95
Returns	64.40	84.63	32.91	42.99	35.81
Returns/expen. ratio	2.96	6.79	.38	2.21	1.24

<u>1/</u> Group	<u>Sale preparation and development costs</u>	<u>Returns to the Government</u>
One	Costs lower than average (\$38.02 per MBF).	Returns 3 to 5 times higher than costs.
Two	Costs low to high.	Returns 5 to 10 times higher than costs.
Three	Costs higher than average.	Returns lower than costs.
Four	Costs moderate to average for all sales.	Returns 1 to 3 times higher than costs.
Five	Costs are low.	Returns are at a minimum but greater than costs.

2/ MBF = thousand board feet.

Table 17.--Reforestation funding and accomplishments by funding source--fiscal years 1978-82

	1982		1981		1980		1979		1978	
	Million Dollars	1,000 Acres	Million Dollars	1,000 Acres	Million Dollars	1,000 Acres	Million Dollars	1,000 Acres	Million Dollars	1,000 Acres
Appropriated <u>2/</u>	58.5	221.6	58.9	217.9	54.8	229.4	46.8	225.0	37.2	198.9
Knutson-Vandenberg funds	62.9	161.2	53.6	204.8	55.1	204.6	53.7	221.1	42.1	212.4
Total	121.4	382.8	112.5	422.7	109.9	434.0	100.5	446.1	79.3	411.3

1/ 1982 funding does not include general administration; prior years do.

2/ Does not include funds for nursery and tree improvement.

Table 18.--Reforestation program needs--fiscal years 1982-85

	Backlog	Current or anticipated	Total	Annual program appropriated funds 1/	
	-----	<u>1,000 acres</u>	-----	<u>1,000 acres</u>	<u>Million dollars</u>
10/1/81 balance	413	804	1,217		
Fiscal year 1982:					
New needs 2/	0	+389	+389		
Adjustments 3/	-101	-52	-153		
Accomplishments	-40	-343	-383	222	58.5
10/1/82 balance	272	798	1,070		
Fiscal year 1983:					
New needs	0	+400	+400		
Projected accomplishments	-56	-349	-405	191	61.8
10/1/83 balance	216	849	1,065		
Fiscal year 1984:					
New needs	0	+400	+400		
Projected accomplishments	-60	-289	-349	132	49.1
10/1/84 balance	156	960	1,116		
Fiscal year 1985:					
New needs	0	+450	+450		
Projected accomplishments	-27	-371	-398	180	66.8
10/1/85 balance 4/	129	1,039 5/	1,168		

1/ Includes Reforestation Trust Fund pursuant to Public Law 96,451, as amended.

2/ New needs are the results of timber harvests, regeneration failures, and natural disasters such as fires, storms, insects, and diseases.

3/ The adjustments include acres regenerated through natural stocking and reduction by management decision (land classification, multiple use, and land use decisions). Forest planning has identified 101,000 acres as regenerated or to be used for purpose other than timber production.

4/ The 129,000 acres have not gone through the Forest planning process, but are currently uneconomical to plant or are within designated RARE II areas.

5/ Desirable level of working inventory.

Table 19.--Reforestation needs as of October 1, 1982, by State, Forest, and site productivity class

State, Commonwealth, or Territory 1/ National Forest	Acres by site productivity class 2/				Total acres
	20-49	50-84	85-119	120+	
Alabama					
Alabama	-- 3/	1,716	4,068	572	6,356
Alaska					
Chugach	28	18	40	--	86
Tongass-Chatham	--	--	1,715	3,721	5,436
Tongass-Ketchikan	--	--	--	16,351	16,351
Tongass-Stikine	--	--	--	12,046	12,046
Subtotal	28	18	1,755	32,118	33,919
Arizona					
Apache-Sitgreaves	2,197	11,606	--	--	13,803
Coconino	181	12,802	137	--	13,120
Coronado	--	--	--	--	--
Kaibab	160	5,367	--	--	5,527
Prescott	--	530	--	--	530
Tonto	67	1,925	--	--	1,992
Subtotal	2,605	32,230	137	--	34,972
Arkansas					
Ouachita	12	19,512	3,065	--	22,589
Ozark and St. Francis	--	5,040	1,260	-	6,300
Subtotal	12	24,552	4,325	--	28,889
California					
Angeles	--	429	--	--	429
Cleveland	547	--	--	--	547
Eldorado	--	--	1,438	1,736	3,174
Inyo	27	150	--	--	177
Klamath	7,165	4,262	3,552	702	15,681
Lassen	--	323	251	84	658
Los Padres	216	329	50	--	595
Mendocino	--	981	734	62	1,777
Modoc	--	3,259	2,825	--	6,084
Plumas	210	1,930	1,146	326	3,612
Rogue River	--	--	384	--	384
San Bernardino	175	388	146	--	709
Sequoia	371	1,457	1,637	--	3,465
Shasta-Trinity	--	9,062	6,812	3,228	19,101

See footnotes at end of table.

Table 19.--Reforestation needs as of October 1, 1982, by State, Forest, and site productivity class--Continued

State, Commonwealth, or Territory 1/ National Forest	Acres by site productivity class 2/				Total acres
	20-49	50-84	85-119	120+	
Sierra	176	1,142	2,286	1,846	5,451
Siskiyou	-- 3/	--	1,087	--	1,087
Six Rivers	--	239	1,685	3,102	5,026
Stanislaus	--	253	3,573	834	4,660
Tahoe	3,258	3,459	2,340	915	9,972
Toiyabe	790	--	--	--	790
Subtotal	12,935	27,663	29,946	12,835	83,379
Colorado					
Arapaho and Roosevelt	--	2,206	--	--	2,206
Grand Mesa, Uncompahgre, and Gunnison	2,102	2,337	1,198	--	5,637
Manti-LaSal	--	500	--	--	500
Pike and San Isabel	161	1,948	780	--	2,889
Rio Grande	277	50	--	--	327
Routt	472	870	105	--	1,447
San Juan	5,302	14,700	--	--	20,002
White River	471	2,924	--	--	3,395
Subtotal	8,785	25,535	2,083	--	36,403
Florida					
Florida	7,617	8,674	10,048	778	27,117
Georgia					
Chattahoochee and Oconee	--	2,829	4,441	806	8,076
Idaho					
Boise	1,018	9,082	9,206	2,570	21,876
Caribou	--	376	663	--	1,039
Challis	659	360	--	--	1,019
Clearwater	6,223	12,303	19,197	60,451	98,174
Idaho Panhandle	27,386	4,567	27,126	36,952	96,031
Kootenai	--	--	1,166	613	1,779
Lolo	10	17	--	--	27
Nezperce	9,132	3,314	7,174	7,931	27,551
Payette	--	2,664	1,523	--	4,187
Salmon	2,992	1,374	699	--	5,065
Sawtooth	--	2,510	--	--	2,510
Targhee	3,692	5,313	--	--	9,005
Subtotal	51,112	41,880	66,754	108,517	268,263

See footnotes at end of table.

Table 19.--Reforestation needs as of October 1, 1982, by State, Forest,
and site productivity class--Continued

State, Commonwealth, or Territory 1/ National Forest	Acres by site productivity class 2/ 20-49 50-84 85-119 120+				Total acres
Illinois Shawnee	107	3,192	248	-- 3/	3,547
Indiana Hoosier	--	1,262	200	50	1,512
Kentucky Daniel Boone	--	1,823	1,851	--	3,674
Louisiana Kisatchie	--	437	3,893	5,458	9,788
Maine White Mountain	--	250	320	30	600
Michigan Hiawatha	1,221	1,526	214	92	3,053
Huron-Manistee	5,033	1,616	135	68	6,852
Ottawa	--	2,450	800	--	3,250
Subtotal	6,254	5,592	1,149	160	13,155
Minnesota Chippewa	170	110	--	--	280
Superior	500	3,574	500	100	4,674
Subtotal	670	3,684	500	100	4,954
Mississippi Mississippi	--	646	7,458	7,795	15,899
Missouri Mark Twain	3,122	4,937	620	--	8,679
Montana Beaverhead	522	4,132	61	--	4,715
Bitterroot	10,053	5,651	5,257	486	21,447
Custer	352	150	--	--	502
Deerlodge	3,055	1,485	1,672	60	6,272
Flathead	8,364	1,248	6,797	4,608	21,017
Gallatin	6,442	4,850	1,567	317	13,176
Helena	3,336	3,404	2,214	70	9,024
Idaho Panhandle	11	--	--	421	432
Kootenai	7,824	10,954	27,786	9,915	56,479
Lewis and Clark	3,260	2,343	701	4	6,308
Lolo	4,725	8,278	9,969	1,349	24,321
Subtotal	47,944	42,495	56,024	17,230	163,693

See footnotes at end of table.

Table 19.--Reforestation needs as of October 1, 1982, by State, Forest,
and site productivity class--Continued

State, Commonwealth, or Territory 1/ National Forest	Acres by site productivity class 2/				Total acres
	20-49	50-84	85-119	120+	
Nevada					
Humboldt	-- 3/	--	--	--	--
Toiyabe	487	--	--	--	487
Subtotal	487	--	--	--	487
New Hampshire					
White Mountain	--	625	750	125	1,500
New Mexico					
Carson	1,534	4,717	--	--	6,251
Cibola	1,264	14,009	--	--	15,273
Gila	2,457	1,097	--	--	3,554
Lincoln	--	985	195	--	1,180
Santa Fe	--	5,222	--	--	5,222
Subtotal	5,255	26,030	195	--	31,480
North Carolina					
North Carolina	224	2,436	1,607	3,308	7,575
Ohio					
Wayne	--	2,650	200	100	2,950
Oklahoma					
Ouachita	--	3,647	736	452	4,835
Oregon					
Deschutes	10,398	2,801	6,741	519	20,459
Fremont	3,596	2,398	358	--	6,352
Malheur	2,135	1,767	--	--	3,902
Mt. Hood	259	4,366	14,739	1,190	20,554
Ochoco	1,024	1,134	--	--	2,158
Rogue River	--	1,094	10,431	--	11,525
Siskiyou	352	2,428	12,120	2,173	17,073
Siuslaw	--	--	--	4,038	4,038
Umatilla	561	7,925	458	--	8,944
Umpqua	15	976	5,387	948	7,326
Wallowa-Whitman	1,746	4,246	295	62	6,349
Willamette	288	2,654	12,284	12,630	27,856
Winema	7,715	738	713	446	9,612
Subtotal	28,089	32,527	63,526	22,006	146,148

See footnotes at end of table.

Table 19.--Reforestation needs as of October 1, 1982, by State, Forest,
and site productivity class--Continued

State, Commonwealth, or Territory 1/ National Forest	Acres by site productivity class 2/				Total acres
	20-49	50-84	85-119	120+	
Pennsylvania					
Allegheny	-- 3/	2,739	3,413	--	6,152
Puerto Rico					
Caribbean	--	--	900	--	900
South Carolina					
South Carolina	--	281	2,200	2,900	5,381
Tennessee					
Cherokee	45	736	565	764	2,110
Texas					
Texas	--	1,280	1,837	470	3,587
Utah					
Ashley	2,544	198	--	--	2,742
Dixie	572	636	--	--	1,208
Fishlake	410	29	--	--	439
Manti-LaSal	--	392	--	--	392
Sawtooth	--	--	--	--	--
Uinta	--	76	331	--	407
Wasatch	816	91	241	--	1,148
Subtotal	4,342	1,422	572	--	6,336
Vermont					
Green Mountain	2,158	231	180	--	2,569
Virginia					
George Washington	769	649	480	602	2,500
Jefferson	935	1,386	316	49	2,686
Subtotal	1,704	2,035	796	651	5,186
Washington					
Colville	--	1,999	2,422	47	4,468
Gifford Pinchot	142	8,479	9,751	1,507	19,879
Idaho Panhandle	101	--	996	1,844	2,941
Mt. Baker-Snoqualmie	5	713	6,877	1,836	9,431
Okanogan	436	3,147	111	--	3,694
Olympic	--	196	9,393	2,125	11,714
Umatilla	--	952	238	--	1,190
Wenatchee	218	3,545	2,578	1,453	7,794
Subtotal	902	19,031	32,366	8,812	61,111

See footnotes at end of table.

Table 19.--Reforestation needs as of October 1, 1982, by State, Forest,
and site productivity class--Continued

State, Commonwealth, or Territory 1/ National Forest	Acres by site productivity class 2/				Total acres
	20-49	50-84	85-119	120+	
West Virginia					
George Washington	25	-- 3/	153	--	178
Jefferson	50	--	--	--	50
Monongahela	--	200	1,717	480	2,397
Subtotal	75	200	1,870	480	2,625
Wisconsin					
Chequamegon	1,621	3,683	1,986	342	7,632
Nicolet	--	2,780	697	--	3,477
Subtotal	1,621	6,463	2,683	342	11,109
Wyoming					
Bighorn	299	--	--	--	299
Black Hills	--	--	--	--	--
Bridger-Teton	--	2,759	1,735	--	4,494
Medicine Bow	6,022	2,439	--	--	8,461
Shoshone	200	--	--	--	200
Targhee	--	1,404	--	--	1,404
Wasatch	--	--	--	--	--
Subtotal	6,521	6,602	1,735	--	14,858
Total	192,614	338,350	311,951	226,859	1,069,774

1/ States not listed had no reforestation needs as of October 1, 1982.

2/ Site productivity class refers to the amount of wood produced in cubic feet per acre per year in a natural unmanaged stand.

3/ -- = zero.

Table 20.--Timber stand improvement funding and accomplishments by funding source--fiscal years 1978-82

	1982		1981		1980		1979		1978	
	Million dollars	1,000 acres	Million dollars	1,000 acres	Million dollars	1,000 acres	Million dollars	1,000 acres	Million dollars	1,000 acres
Appropriated <u>2/</u>	22.6	240.2	32.7	257.0	37.0	298.9	34.5	323.8	26.5	256.2
Knutson-Vandenberg funds	14.9	120.8	20.8	139.4	19.9	158.1	17.7	153.3	18.0	164.2
Total	37.5	361.0	53.5	396.4	56.9	457.0	52.2	477.1	44.5	420.4

1/ 1982 funding does not include general administration; prior years do.

2/ Does not include funds for nursery and tree improvement.

Table 21.--Timber stand improvement program needs--fiscal years 1982-85

	Work needs 1,000 acres	Annual program, appropriated funds 1/ 1,000 Million acres dollars	
10/1/81 balance	1,716		
Fiscal year 1982:			
New needs	+330		
Accomplishments <u>2/</u>	-361	240	22.6
10/1/82 balance	1,685		
Fiscal year 1983:			
New needs	+375		
Projected accomplishments	-383	241	31.0
10/1/83 balance	1,677		
Fiscal year 1984:			
New needs	+431		
Projected accomplishments	-330	188	28.3
10/1/84 balance	1,778		
Fiscal year 1985:			
New needs	+400		
Projected accomplishments	-302	160	23.2
10/1/85 balance	1,876		
Fiscal year 1986:			
New needs	+400		
Projected accomplishments	-420	180	26.1
10/1/86 balance	1,856		

1/ Includes Reforestation Trust Fund pursuant to Public Law 96-451,
as amended.

2/ Accomplishments do not include pruning and fertilization.

Table 22.--Timber stand improvement needs as of October 1, 1982, by State, Forest, and site productivity class

State, Commonwealth, or Territory 1/ National Forest	Acres by site productivity class 2/ 20-49 50-84 85-119 120+				Release total	Acres by site productivity class 20-49 50-84 85-119 120+				Thinning total	TSI total
	20-49	50-84	85-119	120+		20-49	50-84	85-119	120+		
Alabama											
Alabama	--	3/ 1,365	910	--	2,275	--	--	--	--	--	2,275
Alaska											
Chugach	--	28	668	--	696	--	178	475	766	1,419	2,115
Tongass-Chatham	--	--	738	2,953	3,691	--	--	229	690	919	4,610
Tongass-Ketchikan	--	--	--	673	673	--	--	--	38,787	38,787	39,460
Tongass-Stikine	--	--	196	--	196	--	956	749	18,545	20,250	30,446
Subtotal	--	28	1,602	3,626	5,256	--	1,134	1,453	58,788	61,375	76,631
Arizona											
Apache-Sitgreaves	--	--	--	--	--	6,600	71,008	5,433	--	83,041	83,041
Coconino	--	16,878	882	--	17,760	--	11,512	12,114	--	23,626	41,386
Coronado	--	--	--	--	--	--	--	--	--	--	--
Kaibab	--	--	--	--	--	1,450	31,077	--	--	32,527	32,527
Prescott	--	--	--	--	--	--	965	--	--	965	965
Tonto	--	--	--	--	--	3,449	9,980	--	--	13,429	13,429
Subtotal	--	16,878	882	--	17,760	11,499	124,542	17,547	--	153,588	171,348
Arkansas											
Ouachita	--	15,313	1,851	--	17,164	61	5,937	566	72	6,636	23,800
Ozark and St. Francis	--	3,440	860	--	4,300	--	4,320	1,080	--	5,400	9,700
Subtotal	--	18,753	2,711	--	21,464	61	10,257	1,646	72	12,036	33,500
California											
Angeles	--	220	--	--	220	--	392	--	--	392	612
Cleveland	24	70	--	--	94	1,693	2,239	--	--	3,932	4,026
Eldorado	--	--	778	1,726	2,504	--	--	980	530	1,510	4,014
Inyo	292	130	--	--	422	--	260	--	--	260	682
Klamath	828	4,053	2,282	964	8,127	3,421	8,519	2,872	1,200	16,012	24,139
Lassen	--	1,442	972	--	2,414	409	1,578	394	81	2,462	4,876
Los Padres	99	382	125	--	606	799	40	10	--	849	1,455
Mendocino	100	2,448	2,958	34	5,540	100	1,175	1,111	12	2,398	7,938
Modoc	--	1,648	1,000	--	2,648	--	9,145	--	30	9,175	11,823
Plumas	2,512	7,784	4,361	4,237	18,894	49	6,318	4,243	1,325	11,935	30,829

See footnotes at end of table.

Table 22.--Timber stand improvement needs as of October 1, 1982, by State, Forest, and site productivity class--Continued

State, Commonwealth, or Territory 1/																
National Forest	Acres by site productivity class				2/ Release total	Acres by site productivity class				Thinning total	TSI total					
	20-49	50-84	85-119	120+		20-49	50-84	85-119	120+							
Rouge River	--	3/	842	--	842	--	--	106	--	106	948					
San Bernardino	130	447	30	--	607	823	3,292	359	--	4,474	5,081					
Sequoia	--	863	1,746	50	2,659	--	587	1,188	32	1,807	4,466					
Shasta-Trinity	707	3,308	9,009	6,693	19,717	--	994	898	490	2,382	22,099					
Sierra	13	185	637	1,148	1,983	115	934	1,403	1,848	4,300	6,283					
Siskiyou	--	--	150	--	150	--	--	--	--	--	150					
Six Rivers	--	1,735	5,717	10,956	18,408	--	213	1,387	5,429	7,029	25,437					
Stanislaus	--	576	4,856	1,390	6,822	--	245	1,202	848	2,295	9,117					
Tahoe	5,581	3,697	4,976	5,985	20,239	2,811	2,099	2,882	2,564	10,356	30,595					
Toiyabe	2,628	--	--	--	2,628	6,531	--	--	--	6,531	7,159					
Subtotal	12,914	28,988	40,439	33,183	115,524	16,751	38,030	19,035	14,389	88,205	203,729					
Colorado																
Arapaho and Roosevelt	--	--	--	--	--	--	118,324	--	--	118,324	118,324					
Grand Mesa, Uncompahgre, and Gunnison	1,158	2,011	1,101	--	4,270	700	1,442	750	--	2,892	7,162					
Manti-LaSal	--	1,500	--	--	1,500	--	100	--	--	100	1,600					
Pike and San Isabel	80	145	--	--	225	--	1,727	60	--	1,787	2,012					
Rio Grande	1,939	12,118	2,101	--	16,158	1,662	10,390	1,801	--	13,853	30,011					
Routt	700	970	--	--	1,670	100	1,092	--	--	1,192	2,862					
San Juan	3,080	490	--	--	3,570	--	2,368	--	--	2,368	5,938					
White River	329	657	--	--	986	3,197	3,196	--	--	6,393	7,379					
Subtotal	7,286	17,891	3,202	--	28,379	5,659	138,639	2,611	--	146,909	175,288					
Florida																
Florida	96	242	--	--	338	127	1,103	69	--	1,299	1,637					
Georgia																
Chattahoochee and Oconee	--	2,476	4,214	323	7,013	--	916	467	--	1,383	8,396					
Idaho																
Boise	--	2,675	2,178	100	4,953	--	2,006	17,739	70	19,815	24,768					
Caribou	--	302	211	--	513	--	952	268	--	1,220	1,733					
Challis	--	--	--	--	--	560	283	--	--	843	843					
Clearwater	322	--	842	1,907	3,071	2,596	237	7,136	10,617	20,586	23,657					

See footnotes at end of table.

Table 22.--Timber stand improvement needs as of October 1, 1982, by State, Forest, and site productivity class--Continued

State, Commonwealth, or Territory 1/ National Forest	Acres by site productivity class 2/				Release				Acres by site productivity class				Thinning total	TSI total
	20-49	50-84	85-119	120+	total	20-49	50-84	85-119	120+	20-49	50-84	85-119	120+	
Idaho Panhandle	1,449	617	8,184	10,449	20,699	8,429	5,696	31,346	49,151	94,622	115,321			
Kootenai	--	3/	255	248	503	--	--	346	3	349	852			
Nezperce	852	35	514	262	1,663	4,152	820	3,174	1,702	9,848	11,511			
Payette	--	37	39	--	76	--	1,359	2,975	8	4,342	4,418			
Salmon	--	11	--	--	11	2,162	1,082	31	--	3,275	3,286			
Sawtooth	35	4	--	--	39	25	77	--	--	102	141			
Targhee	--	--	--	--	--	94	4,526	--	--	4,620	4,620			
Subtotal	2,658	3,681	12,223	12,966	31,528	18,018	17,038	63,015	61,551	159,622	191,150			
Illinois														
Shawnee	198	5,857	462	90	6,607	333	9,888	777	100	11,098	17,705			
Indiana														
Hoosier	--	580	74	70	724	--	2,103	260	198	2,561	3,285			
Kentucky														
Daniel Boone	--	2,801	2,137	335	5,273	129	2,823	6,556	831	10,339	15,612			
Louisiana														
Kitsatchie	--	240	1,585	605	2,430	--	254	291	330	875	3,305			
Maine														
White Mountain	--	140	214	35	389	--	60	90	15	165	554			
Michigan														
Hiawatha	138	635	41	--	814	237	780	113	--	1,130	1,944			
Huron-Manistee	1,579	3,016	191	--	4,786	16	1,411	141	--	1,568	6,354			
Ottawa	--	600	179	--	779	--	--	90	--	90	869			
Subtotal	1,717	4,251	411	--	6,379	253	2,191	344	--	2,788	9,167			
Minnesota														
Chippewa	300	216	--	--	516	--	--	--	--	--	516			
Superior	2,611	5,272	200	70	8,153	184	800	40	20	1,044	9,197			
Subtotal	2,911	5,488	200	70	8,669	184	800	40	20	1,044	9,713			

See footnotes at end of table.

Table 22.--Timber stand improvement needs as of October 1, 1982, by State, Forest, and site productivity class--Continued

State, Commonwealth, or Territory 1/ National Forest	Acres by site productivity class 2/			Release			Acres by site productivity class				Thinning total	TSI total
	20-49	50-84	85-119	120+	total		20-49	50-84	85-119	120+		
Mississippi												
Mississippi	--	3/	--	2,611	2,118	4,729	--	--	--	510	510	5,239
Missouri												
Mark Twain	3,474	6,112	313	--	9,899		2,110	3,810	355	--	6,275	16,174
Montana												
Beaverhead	559	821	82	--	1,462		243	3,092	1,064	38	4,437	5,899
Bitterroot	765	229	482	13	1,489		3,864	1,477	2,464	32	7,837	9,326
Custer	--	--	--	--	--		167	296	187	--	650	650
Deerlodge	--	210	95	--	305		10,549	2,390	1,383	--	14,322	14,627
Flathead	1,016	79	183	590	1,868		1,164	604	6,042	16,823	24,633	26,501
Gallatin	5	75	3	15	98		134	3,743	831	1,136	5,844	5,942
Helena	342	292	568	33	1,235		1,267	2,306	2,194	85	5,852	7,087
Idaho Panhandle	--	--	59	15	74		80	--	613	235	928	1,002
Kootenai	75	8	1,131	790	2,004		2,770	7,710	31,630	17,504	59,614	61,618
Lewis and Clark	97	197	163	--	457		753	628	119	--	1,500	1,957
Lolo	456	380	537	67	1,440		4,492	2,909	9,715	1,309	18,425	19,865
Subtotal	3,315	2,291	3,303	1,523	10,432		25,483	25,155	56,242	37,162	144,042	154,474
Nevada												
Humboldt	200	--	--	--	200		--	--	--	--	--	200
Toiyabe	300	--	--	--	300		700	--	--	--	700	1,000
Subtotal	500	--	--	--	500		700	--	--	--	700	1,200
New Hampshire												
White Mountain	--	275	800	75	1,150		--	150	210	25	385	1,535
New Mexico												
Carson	--	192	--	--	192		15,492	11,011	2,330	--	28,833	21,025
Cibola	--	--	--	--	--		--	24,735	--	--	24,735	24,735
Gila	392	--	--	--	392		9,712	56,388	5,000	480	71,580	71,972
Lincoln	--	--	--	--	--		--	526	100	--	626	626
Santa Fe	--	700	--	--	700		--	41,153	--	--	41,153	41,853
Subtotal	392	892	--	--	1,284		25,204	133,813	7,430	480	166,927	168,211
North Carolina												
North Carolina	--	742	286	2,342	3,370		--	741	84	23	848	4,218

See footnotes at end of table.

Table 22.--Timber stand improvement needs as of October 1, 1982, by State, Forest, and site productivity class--Continued

State, Commonwealth, or Territory 1/ National Forest	Acres by site productivity class 2/				Acres by site productivity class				Thinning total	TSI total
	20-49	50-84	85-119	120+	20-49	50-84	85-119	120+		
Ohio										
Wayne	-- 3/	918	125	116	1,159	2,869	350	285	3,504	4,663
Oklahoma										
Ouachita	--	2,020	139	222	2,381	2,007	60	--	2,067	4,448
Oregon										
Deschutes	--	3,630	418	--	4,048	2,585	283	--	9,248	12,296
Fremont	--	2,165	--	--	2,165	2,087	680	--	3,777	5,742
Malheur	504	159	--	--	663	2,560	--	--	7,076	7,737
Mt. Hood	--	142	749	183	1,074	2,466	8,252	750	11,531	12,605
Ochoco	186	120	--	--	306	327	--	--	3,669	3,975
Rogue River	--	--	4,297	--	4,297	103	1,164	--	1,267	5,564
Siskiyou	15	1,182	12,375	4,732	18,304	2,406	2,855	816	6,077	24,381
Siuslaw	--	--	--	3,170	3,170	--	--	3,398	3,398	6,568
Umatilla	--	--	--	--	--	--	--	--	3,313	3,313
Umpqua	--	739	4,193	956	5,888	3,945	8,025	3,983	15,953	21,841
Wallowa-Whitman	174	549	6	--	729	6,064	239	--	11,736	12,465
Willamette	--	275	3,575	6,299	10,149	332	4,004	10,116	14,452	24,601
Winema	--	--	--	--	--	17,505	5,808	--	28,638	28,638
Subtotal	879	8,961	25,613	15,340	50,793	42,776	32,147	19,063	120,135	170,928
Pennsylvania										
Allegheny	--	--	--	--	--	680	1,508	--	2,188	2,188
Puerto Rico										
Caribbean	--	--	--	1,600	1,600	--	--	--	--	1,600
South Carolina										
South Carolina	--	75	650	725	1,450	35	310	345	690	2,140
South Dakota										
Black Hills	--	--	--	--	--	--	--	--	24,333	24,333
Tennessee										
Cherokee	40	2,978	2,799	2,410	8,227	2,524	971	487	4,039	12,266
Texas										
Texas	--	201	342	104	647	640	1,060	340	2,040	2,687

See footnotes at end of table.

Table 22.--Timber stand improvement needs as of October 1, 1982, by State, Forest, and site productivity class--Continued

State, Commonwealth, or Territory 1/ National Forest	Acres by site productivity class 2/				Acres by site productivity class				Thinning total	TSI total
	20-49	50-84	85-119	120+	20-49	50-84	85-119	120+		
Utah										
Ashley	295	18	-- 3/	--	313	4,911	--	--	5,412	5,725
Dixie	--	--	--	--	--	4,052	--	--	8,993	8,993
Fishlake	26	--	--	--	26	75	--	--	75	101
Manti-LaSal	--	5,998	--	--	5,998	--	--	--	1,963	7,961
Sawtooth	--	--	--	--	--	--	--	--	--	--
Uinta	--	--	--	--	--	--	111	--	111	111
Wasatch	--	--	--	--	--	734	377	--	1,478	1,478
Subtotal	321	6,016	--	--	6337	9,697	488	--	18,032	24,369
Vermont										
Green Mountain	2,609	228	424	--	3,261	3,856	578	--	4,820	8,081
Virginia										
George Washington	86	91	170	601	948	831	--	254	1,535	2,483
Jefferson	113	798	892	--	1,803	1,250	830	50	2,130	3,933
Subtotal	199	889	1,062	601	2,751	450	830	304	3,665	6,416
Washington										
Colville	--	604	2,450	160	3,214	1,537	3,875	147	5,599	8,813
Gifford Pinchot	--	355	527	342	1,224	3,881	15,263	5,189	25,987	27,211
Idaho Panhandle	--	--	--	289	289	--	330	885	1,313	1,602
Mt. Baker-Snoqualmie	--	--	321	249	570	1,517	3,443	2,218	7,178	7,748
Okanogan	--	245	--	--	245	4,756	--	--	5,705	5,950
Olympic	--	--	314	--	314	657	8,902	2,486	12,223	12,537
Umatilla	--	--	--	--	--	1,918	--	--	2,003	2,003
Wenatchee	--	988	364	--	1,352	13,462	1,763	1,759	18,678	20,030
Subtotal	--	2,192	3,976	1,040	7,208	27,728	33,576	12,684	78,686	85,894
West Virginia										
George Washington	--	35	82	95	212	108	62	16	186	398
Jefferson	--	--	--	100	100	100	100	--	200	300
Monongahela	--	140	1,356	316	1,812	160	1,077	355	1,592	3,404
Subtotal	--	175	1,438	511	2,124	368	1,239	371	1,978	4,102

See footnotes at end of table.

Table 22.--Timber stand improvement needs as of October 1, 1982, by State, Forest, and site productivity class--Continued

State, Commonwealth, or Territory 1/ National Forest	Acres by site productivity class 2/			Release			Acres by site productivity class			Thinning total	TSI total
	20-49	50-84	85-119	120+	total		20-49	50-84	85-119	120+	
Wisconsin											
Chequamegon	--	3/ 857	587	52	1,496		--	285	578	120	2,479
Nicolet	--	850	200	--	1,050		--	375	100	--	1,525
Subtotal	--	1,707	787	52	2,546		--	660	678	120	4,004
Wyoming											
Bighorn	29,330	1,102	--	--	30,432		4,692	--	--	--	35,124
Black Hills	--	--	--	--	--		2,544	--	--	--	2,544
Bridger-Teton	--	--	--	--	--		--	1,643	1,194	--	2,837
Medicine Bow	6,227	--	--	--	6,227		6,528	--	--	--	12,755
Shoshone	829	--	--	--	829		6,340	2,316	--	--	9,485
Targhee	--	--	--	--	--		--	52	--	--	52
Wasatch	--	--	--	--	--		224	--	--	--	224
Subtotal	36,386	1,102	--	--	37,488		20,328	4,011	1,194	--	63,021
Total	75,895	147,433	115,934	80,082	419,344		196,079	608,059	253,511	208,493	1,685,486

1/ States not listed had no timber stand improvement needs as of October 1, 1982.
2/ site productivity class refers to the cubic feet of wood produced per acre per year in a natural unmanaged stand.
3/ -- = zero.

Table 23.--Certification of reforestation and timber stand improvement acreages by State and National Forest--fiscal year 1982

State, Commonwealth, or Territory 1/ National Forest	Planted	Seeded	Natural regen. w/ site prep. 2/	Natural regen. w/o site prep. 2/	Total refor. 2/	Release	Pre- commercial thinning	Total TSI 2/
Alabama								
Alabama	125	-- 3/	--	--	125	--	--	--
Alaska								
Chugach	74	--	--	--	74	--	71	71
Tongass-Chatham	--	--	--	430	430	--	1,522	1,522
Tongass-Ketchikan	--	--	--	6,503	6,503	319	2,572	2,891
Tongass-Stikine	24	--	--	4,398	4,422	--	1,718	1,718
Subtotal	98	--	--	11,331	11,429	319	5,883	6,202
Arizona								
Apache-Sitgreaves	303	--	--	313	616	--	--	--
Coconino	360	--	--	--	360	--	--	--
Coronada	--	--	--	--	--	--	611	611
Kaibab	167	--	--	--	167	--	9,212	9,212
Prescott	--	--	--	--	--	--	245	245
Tonto	--	--	--	--	--	--	1,040	1,040
Subtotal	830	--	--	313	1,143	--	11,108	11,108
Arkansas								
Ouachita	4,859	--	387	--	5,246	6,445	1,477	7,922
Ozark and St. Francis	2,766	--	--	--	2,766	6,757	4,254	11,011
Subtotal	7,625	--	387	--	8,012	13,202	5,731	18,933
California								
Angeles	--	--	--	--	--	464	92	556
Cleveland	--	--	--	--	--	--	--	--
Eldorado	544	--	--	--	544	1,491	30	1,521
Inyo	--	--	--	--	--	50	438	488
Klamath	131	--	--	--	131	615	951	1,566
Lassen	65	--	--	--	65	--	--	--
Los Padres	--	--	--	--	--	--	--	--
Mendocino	115	--	--	--	115	250	290	540
Modoc	--	--	--	--	--	--	--	--
Plumas	1,671	--	--	--	1,671	--	362	362

See footnotes at end of table.

Table 23.--Certification of reforestation and timber stand improvement acreages by State and National Forest--fiscal year 1982--Continued

State, Commonwealth, or Territory 1/ National Forest	Planted	Seeded	Natural regen. w/ site prep. 2/	Natural regen. w/o site prep. 2/	Total refor. 2/	Release	Pre- commercial thinning	Total TSI 2/
Rogue River	-- 3/	--	--	--	--	--	--	--
San Bernardino	--	--	--	--	--	--	--	--
Sequoia	48	--	--	--	48	191	834	1,025
Shasta-Trinity	--	--	--	--	--	--	--	--
Sierra	7,371	--	--	--	7,371	--	--	--
Siskiyou	--	--	--	--	--	--	--	--
Six Rivers	935	--	--	--	935	--	200	200
Stanislaus	174	--	--	--	174	80	--	80
Tahoe	664	--	--	--	664	736	--	736
Toiyabe	--	--	--	--	--	195	--	195
Subtotal	11,718	--	--	--	11,718	4,072	3,197	7,269
Colorado								
Arapaho and Roosevelt	750	--	--	1,500	2,250	--	4,610	4,610
Grand Mesa, Uncompahgre, and Gunnison	61	--	268	--	329	1,704	868	2,572
Manti-LaSal	--	--	--	--	--	--	200	200
Pike and San Isabel	775	--	26	--	801	623	801	1,424
Rio Grande	1,398	--	--	--	1,398	--	--	--
Routt	302	--	419	--	721	134	458	592
San Juan	1,381	--	--	103	1,484	300	--	300
White River	331	--	--	--	331	80	720	800
Subtotal	4,998	--	713	1,603	7,314	2,841	7,657	10,498
Florida								
Florida	6,800	--	--	130	6,930	93	1,044	1,137
Georgia								
Chattahoochee and Oconee	4,952	--	2,402	--	7,354	2,729	427	3,156
Idaho								
Boise	1,597	--	350	--	1,947	1,685	2,070	3,755
Caribou	110	--	--	--	110	150	220	370
Challis	30	--	--	--	30	--	526	526
Clearwater	330	--	37	229	596	481	631	1,112

See footnotes at end of table.

Table 23.--Certification of reforestation and timber stand improvement acreages by State and National Forest--fiscal year 1982--Continued

State, Commonwealth, or Territory 1/ National Forest	Planted	Seeded	Natural regen. w/ site prep. 2/	Natural regen. w/o site prep. 2/	Total refor. 2/	Release	Pre- commercial thinning	Total TSI 2/
Idaho Panhandle	2,850	-- 3/	35	889	3,774	1,392	4,716	6,108
Kootenai	--	--	--	--	--	--	--	--
Nezperce	678	--	50	--	728	65	872	937
Payette	1,036	--	114	--	1,150	--	--	--
Salmon	62	--	60	--	122	309	646	955
Sawtooth	--	--	--	--	--	30	--	30
Targhee	1,699	--	629	--	2,328	--	1,383	1,383
Subtotal	8,392	--	1,275	1,118	10,785	4,112	11,064	15,176
Illinois Shawnee	371	--	138	--	509	322	192	514
Indiana Wayne-Hoosier	300	--	95	--	395	125	46	171
Kentucky Daniel Boone	3,456	--	1,885	--	5,341	702	357	1,059
Louisiana Kisatchie	4,552	--	1,612	542	6,706	382	748	1,130
Maine White Mountain	--	--	133	70	203	200	30	230
Michigan Hiawatha	1,783	--	707	457	2,947	1,543	150	1,693
Huron-Manistee	687	--	2,794	1,229	4,710	2,355	368	2,723
Ottawa	912	--	1,780	1,485	4,177	793	1,151	1,944
Subtotal	3,382	--	5,281	3,171	11,834	4,691	1,669	6,360
Minnesota Chippewa	750	--	3,026	133	3,909	1,489	--	1,489
Superior	4,841	--	452	179	5,472	5,004	1,262	6,266
Subtotal	5,591	--	3,478	312	9,381	6,493	1,262	7,755

See footnotes at end of table.

Table 23.--Certification of reforestation and timber stand improvement acreages by State and National Forest--fiscal year 1982--Continued

State, Commonwealth, or Territory 1/ National Forest	Planted	Seeded	Natural regen. w/ site prep. 2/	Natural regen. w/o site prep. 2/	Total refor. 2/	Release	Pre- commercial thinning	Total TSI 2/
Mississippi	5,614	-- 3/	2,811	142	8,567	1,622	1,460	3,082
Mississippi								
Missouri	151	--	5,227	--	5,378	7,738	3,728	11,466
Missouri								
Mark Twain								
Montana								
Beaverhead	114	--	130	--	244	817	703	1,520
Bitterroot	977	--	--	--	977	--	1,792	1,792
Custer	--	--	--	--	--	15	40	55
Deerlodge	--	90	488	303	881	45	195	240
Flathead	259	173	--	43	475	1,036	1,691	2,727
Gallatin	327	--	214	--	541	--	669	669
Helena	123	6	--	10	139	--	86	86
Idaho Panhandle	--	--	--	--	--	--	--	--
Kootenai	4,732	55	2,918	1,834	9,539	--	5,270	5,270
Lewis and Clark	364	--	48	30	442	--	1,030	1,030
Lolo	1,408	68	524	1,009	3,009	61	1,794	1,855
Subtotal	8,304	392	4,322	3,229	16,247	1,974	13,270	15,244
New Hampshire								
White Mountain	--	--	280	107	387	1,149	350	1,499
New Mexico								
Carson	1,158	--	--	--	1,158	--	8,094	8,094
Cibola	--	--	--	--	--	--	5,955	5,955
Gila and Apache	642	--	27	--	669	--	6,128	6,128
Lincoln	790	--	--	1,890	2,680	--	4,010	4,010
Santa Fe	898	--	--	--	898	--	11,556	11,556
Subtotal	3,488	--	27	1,890	5,405	--	35,743	35,743
New York								
Green Mountain	10	--	--	--	10	--	111	111
North Carolina								
North Carolina	1,660	--	899	--	2,559	1,331	606	1,937

See footnotes at end of table.

Table 23.--Certification of reforestation and timber stand improvement acreages by State and National Forest--fiscal year 1982--Continued

State, Commonwealth, or Territory 1/ National Forest	Planted	Seeded	Natural		Total refor. 2/ Release	Pre- commercial thinning	Total TSI 2/
			regen. w/ site prep. 2/	Natural regen. w/o site prep. 2/			
Ohio							
Wayne	-- 3/	--	226	--	226	161	236
Oklahoma							
Ouachita	1,206	--	--	--	1,206	991	1,482
Oregon							
Deschutes	4,201	--	314	--	4,515	1,089	5,604
Fremont	4,374	--	--	--	4,374	3,060	7,434
Malheur	181	--	--	--	181	--	181
Mt. Hood	3,645	--	62	312	4,019	67	4,086
Ochoco	849	--	--	--	849	624	1,473
Rogue River	832	--	296	19	1,147	--	1,147
Siskiyou	2,144	--	--	--	2,144	2,025	4,169
Siuslaw	2,568	--	--	--	2,568	2,367	4,935
Umatilla	447	--	--	--	447	--	447
Umpqua	9,786	188	1,132	68	11,465	1,565	13,030
Wallowa-Whitman	1,343	243	1,423	26	1,659	177	1,836
Willamette	25,282	461	267	59	26,069	525	26,594
Winema	--	--	--	--	--	--	--
Subtotal	55,652	892	3,541	484	60,569	11,499	48,205
Pennsylvania							
Allegheny	30	--	1,346	196	1,572	--	850
Puerto Rico							
Caribbean	100	--	--	--	100	1,400	1,400
South Carolina							
South Carolina	4,709	--	2,615	--	7,324	2,476	9,800
South Dakota							
Black Hills	--	--	--	--	--	--	--
Tennessee							
Cherokee	1,190	--	585	--	1,775	2,469	4,244
Texas							
Texas	3,266	--	286	48	3,600	261	3,861

See footnotes at end of table.

Table 23.--Certification of reforestation and timber stand improvement acreages by State and National Forest--fiscal year 1982--Continued

State, Commonwealth, or Territory 1/ National Forest	Planted	Seeded	Natural regen. w/ site prep. 2/	Natural regen. w/o site prep. 2/	Total refor. 2/	Release	Pre- commercial thinning	Total TSI 2/
Utah								
Ashley	-- 3/	--	212	282	494	34	383	417
Dixie	448	--	--	--	448	--	6,593	6,593
Fishlake	--	--	--	--	--	223	80	303
Manti-LaSal	--	--	--	--	--	171	379	550
Sawtooth	--	--	--	--	--	--	--	--
Uinta	--	--	--	--	--	--	--	--
Wasatch	70	--	--	141	211	--	1,187	1,187
Subtotal	518	--	212	423	1,153	428	8,622	9,050
Vermont								
Green Mountain	--	--	27	--	27	569	160	729
Virginia								
George Washington	457	--	1,351	--	1,808	680	50	730
Jefferson	449	--	1,526	--	1,975	1,078	944	2,022
Subtotal	906	--	2,877	--	3,783	1,758	994	2,752
Washington								
Colville	2,753	--	6	160	2,919	476	1,148	1,624
Gifford Pinchot	10,589	--	--	248	10,837	322	9,897	10,219
Idaho Panhandle	--	--	--	--	--	59	301	360
Mt. Baker-Snoqualmie	8,761	--	--	286	9,047	305	2,705	3,010
Okanogan	182	--	155	--	337	853	3,865	4,718
Olympic	7,103	1	10	26	7,140	85	3,660	3,745
Umatilla	733	--	--	--	733	--	119	119
Wenatchee	7,969	--	608	--	8,577	321	1,208	1,529
Subtotal	38,090	1	779	720	39,590	2,421	22,903	25,324
West Virginia								
George Washington	67	--	--	--	67	--	20	20
Monongahela	--	--	13	--	13	187	115	302
Subtotal	67	--	13	--	80	187	135	322

See footnotes at end of table.

Table 23.--Certification of reforestation and timber stand improvement acreages by State and National Forest--fiscal year 1982--Continued

State, Commonwealth, or Territory 1/ National Forest	Planted	Seeded	Natural regen. w/ site prep. 2/	Natural regen. w/o site prep. 2/	Total refor. 2/	Release	Pre- commercial thinning	Total TSI 2/
Wisconsin								
Chequamegon	1,265	-- 3/	1,802	1,088	4,155	2,232	77	2,309
Nicolet	439	--	3,906	122	4,467	361	--	361
Subtotal	1,704	--	5,708	1,210	8,622	2,593	77	2,670
Wyoming								
Bighorn	602	133	--	216	951	--	--	--
Black Hills	--	--	--	--	--	--	2,129	2,129
Bridger-Teton	1,864	--	--	--	1,864	--	1,308	1,308
Medicine Bow	1,011	--	209	306	1,526	--	1,512	1,512
Shoshone	--	--	--	--	--	418	60	478
Targhee	--	--	--	--	--	--	--	--
Wasatch	--	--	--	--	--	--	176	176
Subtotal	3,477	133	209	522	4,341	418	5,185	5,603
Total	193,332	1,418	49,389	27,561	271,700	81,728	197,460	279,188

1/ States not listed had no certification in fiscal year 1982.

2/ Regen. = regeneration, w/ site prep. = site preparation, w/o site prep. = without site preparation,
refor. = reforestation, TSI = timber stand improvement.

3/ -- = zero.

Table 24.--Certification of reforestation and timber stand improvement acreages by Region--fiscal year 1982

Region	Reforestation				Timber stand improvement		
	Plant	Seed	Natural regeneration		Release	Precommercial Thinning	Total
			With site preparation	Without site preparation			
Northern	12,162	392	4,444	4,347	3,971	19,790	23,761
Rocky Mountain	6,611	133	922	2,125	3,259	23,292	26,551
Southwest	4,318	--	27	2,203	--	46,851	46,851
Intermountain	6,916	--	1,365	423	2,797	15,151	10,948
Pacific Southwest	11,718	--	--	--	3,877	3,197	7,074
Pacific Northwest	93,742	893	4,320	1,204	13,861	59,308	73,169
Southern	46,228	--	16,359	862	29,416	15,323	44,739
Eastern	11,539	--	21,952	5,066	24,228	8,665	32,893
Alaska	98	--	--	11,331	319	5,883	6,202
Total	193,332	1,418	49,389	27,561	81,728	197,460	279,188

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Table 25.--Developed recreation use on National Forest System lands by State--fiscal years
1978-82

State, 1/ Commonwealth, or Territory	1982	1981	1980	1979	1978
	1,000 RVD's 2/				
Alabama	291.9	290.7	298.1	271.7	271.7
Alaska	589.4	631.0	557.6	885.7	734.9
Arizona	5,725.2	6,235.9	5,900.6	5,355.7	5,006.9
Arkansas	784.4	660.8	679.6	757.2	748.1
California	23,129.9	22,319.4	23,431.2	22,379.2	21,968.6
Colorado	9,341.5	9,638.4	9,904.1	9,606.4	8,568.9
Florida	1,490.1	1,514.7	1,578.5	1,422.2	1,488.4
Georgia	405.7	387.6	415.3	363.4	425.1
Idaho	3,423.7	3,642.5	3,663.7	3,526.2	3,192.5
Illinois	222.5	200.3	207.0	207.8	197.1
Indiana	217.2	189.9	203.4	198.5	191.3
Kansas	6.0	6.0	5.4	6.0	6.0
Kentucky	618.2	740.8	813.5	631.7	521.7
Louisiana	163.2	219.1	183.5	211.6	250.9
Maine	27.9	17.1	10.8	49.2	93.5
Michigan	1,522.2	1,486.6	1,457.2	1,330.2	1,379.0
Minnesota	1,007.2	1,046.5	1,173.5	1,151.2	1,300.7
Mississippi	240.4	248.8	258.8	285.6	247.9
Missouri	440.0	438.3	425.8	345.2	375.1
Montana	2,818.9	2,883.6	2,616.1	2,502.0	2,578.9
Nebraska	49.1	49.6	48.6	45.6	61.4
Nevada	1,048.6	1,057.1	1,020.2	974.4	822.1
New Hampshire	936.8	1,000.3	878.6	891.8	1,090.9
New Mexico	2,598.0	2,510.6	2,481.6	2,206.4	2,630.4
New York	8.5	9.1	9.4	9.0	9.5
North Carolina	1,281.5	1,397.1	1,475.7	1,237.8	1,131.6
North Dakota	17.2	16.1	14.0	12.9	15.1
Ohio	53.7	55.5	57.9	54.1	62.4
Oklahoma	100.0	81.5	75.6	77.4	82.3
Oregon	7,730.1	8,312.1	8,456.2	8,000.6	7,494.3

See footnotes at end of table.

Table 25.--Developed recreation use on National Forest System lands by State--fiscal years
1978-82--Continued

State, ^{1/} Commonwealth, or Territory	1982	1981	1980	1979	1978
	<u>1,000 RVD's</u> ^{2/}				
Pennsylvania	570.6	635.4	610.6	620.2	617.7
Puerto Rico	218.5	241.6	416.2	396.2	350.5
South Carolina	272.7	285.4	246.6	224.3	193.8
South Dakota	548.1	608.8	605.4	593.9	612.4
Tennessee	1,016.1	1,076.4	1,166.2	861.0	887.1
Texas	395.9	403.0	310.4	341.3	363.6
Utah	5,165.2	5,163.4	5,045.1	4,640.2	4,285.0
Vermont	603.0	446.0	401.1	409.0	414.5
Virginia	702.7	714.3	687.5	632.9	649.6
Washington	5,437.7	4,837.1	4,811.1	5,238.0	5,181.9
West Virginia	415.2	399.9	402.2	360.9	464.0
Wisconsin	552.6	566.6	565.2	491.7	540.7
Wyoming	2,140.9	2,216.9	2,042.4	2,055.0	2,122.5
Total	84,328.2	84,881.8	85,611.5	81,861.3	79,630.5

^{1/} States not listed have no Forest Service recreation program.

^{2/} One recreation visitor-day (RVD) is the recreation use of National Forest land or water that aggregates 12 visitor-hours. This may entail 1 person for 12 hours, 12 persons for 1 hour, or any equivalent combination of individual or group use, either continuous or intermittent.

Table 26.--Dispersed recreation use on National Forest System lands by State--fiscal years
1978-82

State, Commonwealth, <u>1/</u> or Territory	1982	1981	1980	1979	1978
	1,000 RVD's <u>2/</u>				
Alabama	980.1	905.3	954.0	882.2	885.5
Alaska	2,982.0	2,588.7	2,350.6	2,350.3	2,797.7
Arizona	11,187.4	11,594.6	11,844.3	8,483.4	6,804.8
Arkansas	1,758.6	1,756.7	1,829.4	2,025.4	2,089.6
California	32,113.9	32,570.3	34,101.9	31,947.1	32,669.8
Colorado	13,020.2	13,430.0	12,544.6	12,433.0	12,665.1
Florida	1,486.8	1,513.6	1,695.4	1,806.9	2,035.4
Georgia	1,777.1	1,723.2	1,781.1	1,535.8	1,418.8
Idaho	7,187.1	7,617.4	7,133.6	7,014.3	6,679.3
Illinois	613.6	623.6	632.3	621.2	824.2
Indiana	575.4	584.9	578.0	541.1	596.2
Kansas	24.9	24.9	22.5	24.9	24.9
Kentucky	1,755.6	2,091.4	2,065.3	1,930.0	1,907.2
Louisiana	316.0	335.8	340.2	331.9	361.1
Maine	23.6	28.7	30.1	36.3	39.0
Michigan	4,130.1	4,160.1	4,029.6	3,685.5	4,123.8
Minnesota	3,485.5	3,570.8	3,425.9	2,999.1	3,104.5
Mississippi	1,039.2	1,012.5	944.5	942.2	790.4
Missouri	1,519.7	1,443.1	1,368.5	1,111.4	1,075.8
Montana	6,730.9	6,657.5	5,961.1	5,827.6	5,691.3
Nebraska	97.0	92.8	115.7	105.7	107.3
Nevada	1,237.3	1,345.5	1,344.1	1,103.5	1,130.2
New Hampshire	1,276.0	1,672.2	1,873.9	1,489.1	1,900.6
New Mexico	3,956.0	3,640.5	3,361.5	3,304.7	3,464.4
New York	14.1	15.4	14.2	11.7	8.4
North Carolina	3,586.9	3,846.4	3,777.1	3,252.8	3,041.3
North Dakota	116.7	117.3	112.8	107.7	114.0
Ohio	432.9	394.6	335.3	307.7	307.4
Oklahoma	305.6	316.9	313.5	315.4	386.6
Oregon	10,308.5	9,986.0	10,071.2	10,016.2	9,576.1

See footnotes at end of table.

Table 26.--Dispersed recreation use on National Forest System lands by State--fiscal years
1978-82--Continued

State, Commonwealth, <u>1/</u> or Territory	1982	1981	1980	1979	1978
	<u>1,000 RVD's <u>2/</u></u>				
Pennsylvania	1,519.7	1,571.1	1,535.0	1,431.7	1,291.9
Puerto Rico	305.4	310.7	269.9	299.4	171.6
South Carolina	882.7	902.8	864.3	761.9	723.8
South Dakota	1,727.1	1,721.0	1,599.5	1,617.2	1,810.2
Tennessee	1,427.6	1,343.6	1,404.3	1,168.6	1,163.5
Texas	1,471.4	1,516.5	1,427.0	1,500.5	1,479.6
Utah	9,625.5	9,254.1	9,015.9	7,860.9	7,495.2
Vermont	140.6	154.3	143.9	149.8	187.4
Virginia	2,926.9	2,839.0	2,640.5	2,659.6	2,637.1
Washington	9,116.9	9,018.3	8,080.5	8,338.5	8,875.6
West Virginia	1,036.6	945.8	998.3	920.0	1,181.3
Wisconsin	1,034.5	1,617.4	1,508.5	1,390.1	1,425.1
Wyoming	3,855.7	3,972.1	3,498.0	3,662.0	3,800.8
Total	149,109.3	150,827.4	147,937.8	138,304.3	138,863.8

1/ States not listed have no Forest Service recreation program.

2/ One recreation visitor-day (RVD) is the recreation use of National Forest land or water that aggregates 12 visitor-hours. This may entail 1 person for 12 hours, 12 persons for 1 hour, or any equivalent combination of individual or group use, either continuous or intermittent.

Table 27.--Total recreation use on National Forest System lands by State--fiscal years
1978-82

State, Commonwealth, <u>1/</u> or Territory	1982	1981	1980	1979	1978
	<u>1,000 RVD's <u>2/</u></u>				
Alabama	1,272.0	1,196.0	1,252.1	1,153.9	1,157.2
Alaska	3,571.4	3,219.7	2,908.2	3,236.0	3,532.6
Arizona	16,912.6	17,830.5	17,744.9	13,839.1	11,811.7
Arkansas	2,543.0	2,417.5	2,509.0	2,783.6	2,837.7
California	55,243.8	54,889.7	57,533.1	54,326.3	54,638.4
Colorado	22,361.7	23,068.4	22,448.7	22,039.4	21,234.0
Florida	2,976.9	3,028.3	3,273.9	3,229.1	3,523.8
Georgia	2,182.8	2,110.8	2,196.4	1,899.2	1,843.9
Idaho	10,610.8	11,259.9	10,797.3	10,540.5	9,871.8
Illinois	836.1	823.9	839.3	829.0	1,021.3
Indiana	792.6	774.8	781.4	739.6	787.5
Kansas	30.9	30.9	27.9	30.9	30.9
Kentucky	2,373.8	2,832.2	2,878.8	2,561.7	2,428.9
Louisiana	479.2	554.9	523.7	543.5	612.0
Maine	51.5	45.8	40.9	85.5	132.5
Michigan	5,652.3	5,646.7	5,486.8	5,015.7	5,502.8
Minnesota	4,492.7	4,617.3	4,599.4	4,150.3	4,405.2
Mississippi	1,279.6	1,261.3	1,203.3	1,227.8	1,038.3
Missouri	1,959.7	1,881.4	1,794.3	1,456.6	1,450.9
Montana	9,549.8	9,541.1	8,577.2	8,329.6	8,270.2
Nebraska	146.1	142.4	164.3	151.3	168.7
Nevada	2,285.9	2,402.6	2,364.3	2,077.9	1,952.3
New Hampshire	2,212.8	2,672.5	2,752.5	2,380.9	2,991.5
New Mexico	6,554.0	6,151.1	5,843.1	5,511.1	6,094.8
New York	22.6	24.5	23.6	20.7	17.9
North Carolina	4,868.4	5,243.5	5,252.8	4,490.6	4,172.9
North Dakota	133.9	133.4	126.8	120.6	129.1
Ohio	486.6	450.1	393.2	361.8	369.8
Oklahoma	405.6	398.4	389.1	392.8	468.9
Oregon	18,038.6	18,298.1	18,537.4	18,016.8	17,070.4

See footnotes at end of table.

Table 27.--Total recreation use on National Forest System lands by State--fiscal years
1978-82--Continued

State, Commonwealth, <u>1/</u> or Territory	1982	1981	1980	1979	1978
	<u>1,000 RVD's <u>2/</u></u>				
Pennsylvania	2,090.3	2,206.5	2,145.6	2,051.9	1,909.6
Puerto Rico	523.9	552.3	686.1	695.6	522.1
South Carolina	1,155.4	1,188.2	1,110.9	986.2	917.6
South Dakota	2,275.2	2,329.8	2,204.9	2,211.1	2,422.6
Tennessee	2,443.7	2,420.0	2,570.5	2,029.6	2,050.6
Texas	1,867.3	1,919.5	1,737.4	1,841.8	1,843.2
Utah	14,790.7	14,417.5	14,061.0	12,501.1	11,780.2
Vermont	743.6	600.3	545.0	558.8	601.9
Virginia	3,629.6	3,553.3	3,328.0	3,292.5	3,286.7
Washington	14,554.6	13,855.4	12,891.6	13,576.5	14,057.5
West Virginia	1,451.8	1,345.7	1,400.5	1,280.9	1,645.3
Wisconsin	1,587.1	2,184.0	2,073.7	1,881.8	1,965.8
Wyoming	5,996.6	6,189.0	5,540.4	5,717.0	5,923.3
Total	233,437.5	235,709.2	233,549.3	220,166.6	218,494.3

1/ States not listed have no Forest Service recreation program.

2/ One recreation visitor-day (RVD) is the recreation use of National Forest land or water that aggregates 12 visitor-hours. This may entail 1 person for 12 hours, 12 persons for 1 hour or any equivalent combination of individual or group use, either continuous or intermittent.

Table 28.--State summary of developed recreation use on National Forest System lands by site--fiscal year 1982

State, Territory, or Commonwealth 1/	Interpretive, observation, & documentary sites		Swimming, boating, & fishing sites		Camp- grounds		Picnic, & sports sites 2/		Hotels, lodges, resorts, & concessions		Recreation residences		Winter sports		Total developed use
		Trail heads													
1,000 RVD's 3/															
Alabama	8.3	--	4/	174.6	22.9	--	--	--	--	--	--	--	--	--	291.9
Alaska	66.5	13.9		152.9	70.1	169.8	23.8	80.1	589.4						
Arizona	164.8	8.5		2,742.8	1,270.3	376.0	333.8	83.2	5,725.2						
Arkansas	46.0	--		492.3	87.7	8.4	10.4	--	784.4						
California	431.1	219.9		10,016.6	3,661.4	1,494.3	3,109.5	3,284.1	23,129.9						
Colorado	426.6	128.2		3,254.4	562.0	370.6	290.5	4,143.9	9,341.5						
Florida	18.5	--		775.9	388.9	--	111.1	--	1,490.1						
Georgia	50.3	--		229.8	72.1	--	28.5	--	405.7						
Idaho	88.4	26.9		1,707.6	374.4	208.3	291.4	484.7	3,423.7						
Illinois	46.5	--		83.8	59.2	--	--	--	222.5						
Indiana	4.8	12.1		134.3	19.7	--	--	--	217.2						
Kansas	--	--		--	6.0	--	--	--	6.0						
Kentucky	64.0	.2		324.0	127.4	--	11.2	--	618.2						
Louisiana	7.5	--		68.8	28.4	--	23.3	--	163.2						
Maine	1.1	--		13.9	3.1	--	--	9.8	27.9						
Michigan	41.8	.6		856.5	150.8	1.0	78.4	124.8	1,522.2						
Minnesota	8.9	.5		342.4	62.6	136.9	209.3	52.2	1,007.2						
Mississippi	4.0	--		110.6	29.5	--	--	--	240.4						
Missouri	5.6	.2		248.7	139.9	--	--	--	440.0						
Montana	152.0	31.9		1,156.7	293.9	149.4	253.6	567.5	2,818.9						
Nebraska	.2	2.0		13.3	32.3	--	--	--	49.1						
Nevada	19.7	13.0		497.2	228.1	77.5	28.6	128.0	1,048.6						
New Hampshire	37.7	2.5		408.2	26.7	90.4	--	346.5	936.8						
New Mexico	188.6	12.3		1,231.7	455.9	74.8	83.6	498.3	2,598.0						
New York	--	1.3		6.8	.4	--	--	--	8.5						
North Carolina	115.5	3.4		814.8	158.5	13.7	6.2	--	1,281.5						
North Dakota	.3	--		14.6	2.3	--	--	--	17.2						
Ohio	1.3	--		24.8	20.4	--	--	--	53.7						
Oklahoma	15.6	--		23.7	37.5	--	--	--	100.0						
Oregon	297.3	398.5		3,912.9	604.6	861.1	390.0	834.2	7,730.1						
Pennsylvania	52.4	--		353.4	46.9	--	51.2	--	570.6						

See footnotes at end of table.

Table 28.--State summary of developed recreation use on National Forest System lands by site--fiscal year 1982--Continued

State, Territory, or Commonwealth 1/	Interpretive, observation, & documentary sites	Trail heads	Swimming, boating, & fishing sites	Camp- grounds	Picnic, & sports sites 2/	Hotels, lodges, resorts, & concessions	Recreation residences	Winter sports	Total developed use
<u>1,000 RVD's 3/</u>									
Puerto Rico	83.8	-- 4/	--	--	114.1	16.8	3.8	--	218.5
South Carolina	4.7	--	39.7	166.9	61.4	--	--	--	272.7
South Dakota	8.3	7.8	40.7	229.5	92.6	36.6	88.8	43.8	548.1
Tennessee	20.8	.9	113.1	569.0	233.0	36.3	43.0	--	1,016.1
Texas	5.1	--	64.9	242.1	51.7	32.1	--	--	395.9
Utah	89.8	29.3	241.3	2,742.1	453.8	576.2	291.4	741.3	5,165.2
Vermont	3.2	--	5.3	34.3	21.4	9.6	.5	528.7	603.0
Virginia	46.0	3.4	64.0	399.6	188.4	.7	.6	--	702.7
Washington	124.0	38.3	118.7	2,530.9	803.1	402.9	285.9	1,133.9	5,437.7
West Virginia	17.9	--	22.1	281.1	92.0	1.4	.7	--	415.2
Wisconsin	5.8	.2	110.0	390.8	20.5	4.4	15.7	5.2	552.6
Wyoming	63.7	45.3	89.9	1,019.6	215.1	257.8	195.8	253.7	2,140.9
Total	2,838.4	1,001.1	5,292.3	38,793.9	11,391.0	5,407.0	6,260.6	13,343.9	84,328.2

1/ States not listed have no Forest Service recreation program.

2/ Includes organization camp sites.

3/ One recreation visitor-day (RVD) is the recreation use of National Forest land or water that aggregates 12 visitor-hours. This may entail 1 person for 12 hours, 12 persons for 1 hour, or any equivalent combination of individual or group use, either continuous or intermittent.

4/ -- = zero.

Table 29.--State summary of dispersed recreation use on National Forest System lands--fiscal year 1982

State, Territory, or Commonwealth 1/	Roads	Trails	Lakes and ponds	Reservoirs	Rivers and streams	General undeveloped area	Total dispersed use
	1,000 RVD's 2/						
Alabama	321.4	48.2	4.4	102.1	103.4	400.6	980.1
Alaska	642.5	258.0	172.5	.4	146.5	1,762.1	2,982.0
Arizona	5,341.1	735.4	35.9	974.3	712.9	3,387.8	11,187.4
Arkansas	390.9	43.6	-- 3/	410.7	145.4	768.0	1,758.6
California	14,196.3	2,513.4	852.7	3,047.3	2,048.5	9,455.7	32,113.9
Colorado	4,955.7	1,740.8	429.1	624.0	682.5	4,588.1	13,020.2
Florida	332.2	12.2	268.1	13.9	177.7	682.7	1,486.8
Georgia	521.0	143.9	--	144.1	218.9	749.2	1,777.1
Idaho	2,040.0	755.4	331.3	267.7	771.0	3,021.7	7,187.1
Illinois	96.4	97.4	1.5	68.1	8.6	341.6	613.6
Indiana	124.0	43.5	--	196.1	22.6	189.2	575.4
Kansas	18.8	--	--	1.1	--	5.0	24.9
Kentucky	685.7	137.7	--	451.9	180.4	299.9	1,755.6
Louisiana	82.6	15.5	--	44.3	27.4	146.2	316.0
Maine	2.9	8.3	.8	.9	1.9	8.8	23.6
Michigan	1,747.1	244.2	329.4	19.3	322.2	1,467.9	4,130.1
Minnesota	475.1	156.0	1,247.2	3.5	193.8	1,409.9	3,485.5
Mississippi	311.6	24.4	7.7	47.7	75.9	571.9	1,039.2
Missouri	504.1	60.4	.2	62.2	227.0	665.8	1,519.7
Montana	2,167.7	844.1	284.1	193.7	392.3	2,849.0	6,730.9
Nebraska	24.0	3.4	--	5.8	.6	63.2	97.0
Nevada	345.0	133.5	15.5	3.7	86.7	652.9	1,237.3
New Hampshire	411.0	563.2	3.7	2.2	25.9	270.0	1,276.0
New Mexico	1,350.6	401.1	31.1	95.3	258.9	1,819.0	3,956.0
New York	.5	4.2	--	1.3	--	8.1	14.1
North Carolina	1,208.1	393.8	12.1	213.9	308.1	1,450.9	3,586.9
North Dakota	27.0	--	--	7.7	4.9	77.1	116.7
Ohio	91.3	51.3	--	23.3	27.3	239.7	432.9
Oklahoma	169.4	9.6	--	30.7	10.9	85.0	305.6
Oregon	3,969.1	866.0	481.3	476.0	786.6	3,729.5	10,308.5
Pennsylvania	429.8	69.7	--	150.3	120.1	749.8	1,519.7

See footnotes at end of table.

Table 29.--State summary of dispersed recreation use on National Forest System lands--fiscal year 1982--Continued

State, Territory, or Commonwealth 1/	Roads	Trails	Lakes and ponds	Reservoirs	Rivers and streams	General undeveloped area	Total dispersed use
	<u>1,000 RVD's 2/</u>						
Puerto Rico	99.3	21.5	-- 3/	--	66.3	118.3	305.4
South Carolina	306.4	30.9	.3	40.0	129.2	375.9	882.7
South Dakota	1,316.7	29.9	--	104.0	34.3	242.2	1,727.1
Tennessee	484.6	145.0	--	117.3	222.6	458.1	1,427.6
Texas	153.8	23.7	.3	908.2	27.0	358.4	1,471.4
Utah	3,183.3	724.4	274.9	822.0	506.8	4,114.1	9,625.5
Vermont	64.7	15.0	3.0	.5	5.0	52.4	140.6
Virginia	951.8	206.3	--	163.1	228.6	1,377.1	2,926.9
Washington	3,060.0	1,082.4	409.1	88.9	516.4	3,960.1	9,116.9
West Virginia	347.2	72.3	.9	43.4	131.8	441.0	1,036.6
Wisconsin	340.6	83.5	223.0	18.7	59.9	308.8	1,034.5
Wyoming	1,291.9	430.1	111.9	122.6	330.6	1,568.6	3,855.7
Total	54,583.2	13,243.2	5,532.0	10,112.2	10,347.4	55,291.3	149,109.3

1/ States not listed have no Forest Service recreation program.

2/ One recreation visitor-day (RVD) is the recreation use of National Forest land or water that aggregates 12 visitor hours. This may entail 1 person for 12 hours, 12 persons for 1 hour, or any equivalent combination of individual or group use, either continuous or intermittent.

3/ -- = Zero.

Table 30.--State summary of total recreation use on National Forest System lands by activity
--fiscal year 1982

State, Territory, or Commonwealth 1/	Camping	Picnicking	Travel (mechanized)	Water sports	Winter sports	Fishing	Hunting
	1,000 RVD's 2/						
Alabama	234.6	83.8	295.6	125.2	--	93.8	221.6
Alaska	288.4	71.3	380.4	11.6	178.5	475.7	296.6
Arizona	4,323.8	893.7	5,391.7	645.7	162.4	662.1	685.3
Arkansas	615.4	151.6	371.4	235.5	--	315.5	458.1
California	1,4299.5	1,528.8	14,067.6	2,143.6	3,684.3	2,953.9	1,221.3
Colorado	4,863.4	626.1	5,397.1	41.9	3,878.8	1,534.3	1,152.8
Florida	993.8	383.9	293.2	243.9	--	183.6	323.5
Georgia	499.1	63.5	482.9	74.4	3.3	227.7	328.2
Idaho	2,792.7	419.1	2,175.0	205.5	571.9	900.7	823.0
Illinois	111.2	53.8	157.1	30.4	1.4	44.6	132.0
Indiana	194.5	24.8	96.6	53.3	--	122.4	97.0
Kansas	1.4	6.5	18.6	.1	.1	.5	1.8
Kentucky	350.3	124.3	603.7	111.6	.8	232.1	150.3
Louisiana	83.3	31.0	79.2	25.7	--	48.3	96.1
Maine	9.8	1.8	2.2	2.2	6.5	2.9	6.2
Michigan	1,303.4	134.8	1,943.2	132.4	173.6	455.7	641.3
Minnesota	1,319.5	50.7	547.9	119.1	109.8	775.8	319.4
Mississippi	190.8	62.8	295.3	83.7	--	58.7	430.2
Missouri	402.7	101.4	466.8	90.3	--	103.3	348.8
Montana	1,817.1	343.4	2,152.8	100.2	603.3	704.3	932.3
Nebraska	25.4	23.1	16.8	2.0	.1	5.7	25.4
Nevada	630.1	189.2	307.8	101.3	172.8	105.3	157.9
New Hampshire	491.1	54.5	459.7	26.3	361.6	21.0	34.4
New Mexico	1,461.5	545.2	1,283.0	65.5	521.2	412.7	34.4
New York	7.8	2.0	.8	-	.5	1.2	5.3
North Carolina	1,043.1	209.2	1,151.6	190.8	13.0	260.3	724.8
North Dakota	14.3	9.2	19.1	1.1	1.3	7.5	57.4
Ohio	45.2	32.0	98.6	8.8	.4	29.3	149.3
Oklahoma	52.2	25.9	143.7	16.2	--	22.6	58.8
Oregon	4,975.7	578.3	3,768.4	431.9	965.5	1,190.7	1,246.6
Pennsylvania	441.9	37.3	374.9	35.5	3.5	253.4	488.7

See footnotes at end of table.

Table 30.--State summary of total recreation use on National Forest System lands by activity
--fiscal year 1982--Continued

State, Territory, or Commonwealth 1/	Camping	Picnicking	Travel (mechanized)	Water sports	Winter sports	Fishing	Hunting
	<u>1,000 RVD's 2/</u>						
Puerto Rico	11.9	177.7	35.1	67.9	-- 3/	--	--
South Carolina	192.6	56.9	301.6	28.5	--	73.2	225.3
South Dakota	219.1	66.4	1,314.5	52.7	55.7	74.6	95.6
Tennessee	691.0	232.7	499.2	151.7	.5	162.6	223.3
Texas	395.9	49.0	161.2	60.7	--	810.6	182.4
Utah	4,511.0	727.6	3,091.3	142.1	834.0	1,229.8	820.1
Vermont	40.3	12.3	69.2	3.3	465.2	5.0	28.7
Virginia	695.3	187.2	808.8	60.4	5.7	333.3	603.8
Washington	3,866.5	531.6	2,611.0	150.0	1,114.2	737.5	1,089.6
West Virginia	487.4	52.9	288.5	18.6	13.6	165.4	209.1
Wisconsin	433.5	26.0	407.3	79.6	22.4	190.1	188.7
Wyoming	1,661.7	176.5	1,357.8	23.0	247.3	474.9	447.1
Total	57,089.2	9,159.8	53,788.9	6,194.4	14,173.2	16,462.6	16,235.4

1/ States not listed have no Forest Service recreation program.

2/ One recreation visitor-day (RVD) is the recreation use of National Forest land or water that aggregates 12 visitor-hours. This may entail 1 person for 12 hours, 12 persons for 1 hour, or any equivalent combination of individual or group use, either continuous or intermittent.

3/ -- = zero.

Table 30.--State summary of total recreation use on National Forest System lands by activity--fiscal year 1982--Continued

See footnotes at end of table.

Table 30.--State summary of total recreation use on National Forest System lands by activity--fiscal year 1982--Continued

State, Territory, or Commonwealth 1/	Hiking & mountain climbing	Horseback riding	Recreation cabin use	Nature study	Sightseeing	Visitor information service users	Other developed site use	Total use
								1,000 RVD's 2/
Puerto Rico	97.9	-- 3/	3.8	8.1	29.1	58.5	33.9	523.9
South Carolina	41.4	25.9	--	28.7	26.8	32.1	122.4	1,155.4
South Dakota	50.2	36.4	88.8	17.5	24.3	46.9	132.5	2,275.2
Tennessee	131.7	28.1	43.0	7.6	51.2	27.7	193.4	2,443.7
Texas	27.2	7.0	--	8.3	34.1	14.9	116.0	1,867.3
Utah	721.0	311.2	290.1	67.7	378.0	126.0	1,540.8	14,790.7
Vermont	16.1	1.0	.5	1.0	33.1	5.1	62.8	743.6
Virginia	224.8	72.5	.6	38.3	339.6	32.7	226.6	3,629.6
Washington	1,042.2	264.8	285.9	139.0	866.4	271.0	1,584.9	14,554.6
West Virginia	97.5	4.6	1.7	6.1	10.5	22.4	73.5	1,451.8
Wisconsin	34.9	5.2	15.7	18.4	8.3	13.5	143.5	1,587.1
Wyoming	381.8	178.3	195.8	45.0	159.5	67.1	580.8	5,996.6
Total	12,734.2	3,670.6	6,376.0	1,960.6	8,520.3	3,703.1	23,369.2	233,437.5

1/ States not listed have no Forest Service recreation program.

2/ One recreation visitor-day (RVD) is the recreation use of National Forest land or water that aggregates 12 visitor-hours. This may entail 1 person for 12 hours, 12 persons for 1 hour, or any equivalent combination of individual or group use, either continuous or intermittent.

3/ -- = zero.

Table 31.--Status of the National Forest units of the National
Wilderness Preservation System--calendar years 1978-82

State or Commonwealth ^{1/}	1982	1981	1980	1979	1978
	<u>1,000 acres</u>				
Alabama	13	13	13	13	13
Alaska	5,453	5,453	5,453	0	0
Arizona	557	557	557	557	496
Arkansas	25	25	25	25	25
California	2,139	2,139	2,139	2,131	1,726
Colorado	2,561	2,561	2,561	1,192	1,046
Florida	23	23	23	23	23
Georgia	32	32	32	32	32
Idaho	3,825	3,825	3,825	1,490	1,285
Kentucky	5	5	5	5	5
Louisiana	9	9	9	0	0
Minnesota	793	793	793	793	749
Missouri	40	40	40	12	12
Montana	3,107	3,107	3,107	3,088	1,792
Nevada	65	65	65	65	65
New Hampshire	26	26	26	26	26
New Mexico	1,402	1,402	1,402	794	676
North Carolina	31	31	31	31	31
Oregon	1,214	1,214	1,214	1,212	951
South Carolina	17	17	17	3	3
South Dakota	10	10	10	0	0
Tennessee	8	8	8	8	8
Utah	30	30	30	30	0
Vermont	17	17	17	17	17
Virginia	9	9	9	9	9
Washington	1,501	1,501	1,501	1,501	1,390
West Virginia	30	30	30	30	30
Wisconsin	20	20	20	20	7
Wyoming	2,193	2,193	2,193	2,193	2,178
Total	25,155	25,155	25,155	15,300	12,595

^{1/} States not listed have no National Forest System acres in
the National Wilderness Preservation System.

Table 32.--Additions to the National Wilderness Preservation System--fiscal year 1982

Public Law	State	Number of new areas	Number of additions	Number of adjustments	Acres
There were no additions to the National Wilderness Preservation System in 1982.					
<hr/>					
Total					
<hr/>					

Table 33.--Additions to the National Wild and Scenic Rivers System--
fiscal year 1982

River	State	Date	Miles
There were no additions to the National Wild and Scenic Rivers System in 1982.			
<hr/>			
Total			
<hr/>			

Table 34.--Wildlife and fish habitat improvement by Region--fiscal year 1982

Region	Wildlife	Resident fish	Anadromous fish	Threatened, endangered, & sensitive species	Knutson- Vandenberg	Total <u>1/</u>
Northern						
Acres	6,015	50	27	460	1,769	8,321
Structures	108	187	71	33	124	523
Rocky Mountain						
Acres	15,226	7	26	0	2,225	17,484
Structures	1,051	95	0	6	118	1,270
Southwestern						
Acres	15,522	0	0	697	6,531	22,750
Structures	101	87	0	30	41	259
Intermountain						
Acres	6,780	48	62	60	468	7,418
Structures	450	239	76	8	1,023	1,796
Pacific Southwest						
Acres	8,813	29	288	1,040	1,985	12,155
Structures	900	215	9	168	826	2,118
Pacific Northwest						
Acres	1,333	46	362	0	9,295	11,036
Structures	518	41	192	17	2,441	3,209
Southern						
Acres	103,302	1,038	1	29,803	42,455	176,599
Structures	2,386	267	0	126	1,101	3,880
Eastern						
Acres	19,803	8,022	33	3,503	7,228	38,589
Structures	2,417	989	2	929	614	4,951
Alaska						
Acres	4,676	190	751	0	0	5,617
Structures	6	1	28	0	24	59
Total						
Acres	181,470	9,430	1,550	35,563	71,956	299,969
Structures	7,937	2,121	378	1,317	6,312	18,065

1/ Does not include outputs that are accomplished in support of other resource programs.

Table 35.--Range allotment management by Region--fiscal year 1982

Region	Total	Number of allotments		Acres	
		Improved management started	Improved management maintained	Total	Suitable
Northern	2,154	33	1,257	10,004,967	3,982,648
Rocky Mountain	2,703	195	1,980	18,970,040	8,390,421
Southwestern	1,519	130	882	20,565,821	14,484,384
Intermountain	2,220	82	1,172	26,135,873	11,000,403
Pacific Southwest	829	69	578	12,547,027	4,699,169
Pacific Northwest	827	67	450	13,009,906	6,859,872
Southern	644	56	449	3,691,960	2,214,766
Eastern	173	73	118	92,872	45,530

Table 36.--Range allotment management--fiscal years 1979-82

	1982	1981	1980	1979
Total allotment	11,069	10,871	10,754	10,967
Improved management started (number of allotments)	705	677	1,236	897
Improved management maintained (number of allotments)	6,886	6,705	6,378	5,698
Total acres (million acres)	105	105	112	109
Suitable acres (million acres)	52	56	58	50
Permitted use (million AUM's ^{1/})	9.9	9.8	9.8	9.8
Actual use (million AUM's)	8.8	8.8	8.8	8.8

^{1/} An animal unit month (AUM) is the amount of grazing required by a 1,000 pound cow for 1 month.

Table 37.--Actual grazing use by State--fiscal year 1982

States <u>1/</u>	Cattle	Sheep	Domestic horses	Wild horses	Wild burros	Total
AUM's <u>2/</u>						
Alabama	3,122	0	0	0	0	3,122
Arizona	1,206,872	20,852	11,502	72	302	1,239,600
Arkansas	42,455	0	237	0	0	42,692
California	491,105	60,068	14,470	9,978	540	576,161
Colorado	854,013	156,222	16,272	0	0	1,026,507
Florida	28,684	0	0	0	0	28,684
Georgia	5,329	0	0	0	0	5,329
Idaho	598,487	207,413	19,419	132	5	825,456
Illinois	16,387	3,748	90	0	0	20,225
Indiana	994	0	0	0	0	994
Kansas	52,368	0	103	0	0	52,471
Louisiana	40,453	0	301	0	0	40,754
Michigan	879	0	0	0	0	879
Minnesota	1,550	0	0	0	0	1,550
Mississippi	12,325	0	0	0	0	12,325
Missouri	32,186	0	42	0	0	32,228
Montana	586,509	21,456	15,694	144	0	623,803
Nebraska	126,658	369	73	0	0	127,100
Nevada	241,571	42,652	752	5,195	108	290,278
New Mexico	768,853	30,031	8,472	1,599	180	809,135
New York	9,580	0	30	0	0	9,610
North Carolina	74	0	0	0	0	74
North Dakota	507,544	76	2,573	0	0	510,193
Ohio	993	0	0	0	0	993
Oklahoma	24,432	0	0	0	0	24,432
Oregon	491,889	41,923	5,061	2,160	0	541,033
South Carolina	341	0	0	0	0	341
South Dakota	435,046	3,963	2,074	0	0	441,083
Texas	70,811	0	95	0	0	70,906
Utah	459,864	196,816	6,259	1,224	0	664,163
Vermont	286	41	0	0	0	327
Virginia	6,006	182	876	0	0	7,064
Washington	107,133	9,013	6,032	0	0	122,178
West Virginia	10,278	300	24	0	0	10,602
Wisconsin	151	0	1	0	0	152
Wyoming	546,574	124,659	20,947	0	0	692,180
Total	7,781,802	919,784	131,399	20,504	1,135	8,854,624

1/ States not listed had no Forest Service grazing program in 1982.

2/ An animal unit month (AUM) is the amount of grazing required by a 1,000 pound cow for 1 month.

Table 38.--Annual grazing statistics--fiscal year 1982

	Permittees 1/		Cattle		Horses and burros		Sheep and goats		Total	
	Thousands	AUM's 2/	Thousands	AUM's	Thousands	AUM's	Thousands	AUM's	Thousands	AUM's
Authorized to graze	1,560,292	8,608,235	132,414	107,257	1,708,233	1,190,954	3,400,939	9,906,446		
Actually grazed: Paid permits	15,276	1,334,552	7,744,903	73,131	1,264,749	910,176	2,622,438	8,728,210		
Free use:										
Recreation stock	91,149		161,960	42,534			161,960	42,534		
Other free use	468	2,209	1,924	12,647	1,926	4,641	6,059	32,794		
Non-NFS lands	(168)	(67,881)	(432,167)	(427)	(29,919)	(24,910)	(98,227)	(463,120)		
Crossing	109	29,915	1,093	177	72,208	4,548	103,216	9,344		
Unauthorized use	137	5,208	425	3,110	1,183	419	6,816	20,074		
Total 3/	107,139	1,371,884	7,781,573	188,539	1,340,066	919,784	2,900,489	8,832,956		
Wild horses			1,461	20,504			1,461	20,504		
Wild burros			207	1,135			207	1,135		
Total Actually Grazed	107,139	1,371,884	7,781,573	190,207	1,340,066	919,784	2,902,157	8,854,595		
Losses:										
Poisonous plants		1,312	21		2,176		3,509			
Predators		784	68		14,544		15,396			
Other 4/		4,192	60		7,057		11,309			

1/ Permittees holding paid permits are not counted in other categories.

2/ An animal unit month (AUM) is the amount of grazing required by a 1,000 pound cow for 1 month.

3/ Non-NFS land data not included in totals.

4/ Includes losses due to thievery, natural death, and accidental death.

Table 39.--Range improvements by type--fiscal year 1982

Improvement type	Unit of measure	Units of construction completed	Total cost
Structural:			
Water developments	Sites	2,158	2,898,541
Range fence	Miles	1,692	4,532,402
Pipeline	Miles	403	1,646,921
Other structural facilities	Sites	368	701,787
Subtotal		N/A <u>1/</u>	9,779,651
Nonstructural:			
Cover manipulation, brush	Acres	83,412	1,391,524
Range plant control	Acres	60,288	767,235
Forage improvement	Acres	36,254	530,090
Noxious farm weed control	Acres	20,700	646,173
Subtotal		200,654	3,335,022
Total		N/A	13,114,673

1/ N/A = not applicable.

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Table 40.--Road and bridge construction and reconstruction by State--fiscal
year 1982

State, Territory, or Commonwealth <u>1/</u>	From appropriated funds			By timber purchasers		
	Roads	Bridges	Cost	Roads <u>2/</u>	Bridges	Cost
	Miles	Number	1,000 dollars	Miles	Number	1,000 dollars
Alabama	20.5	2	1,364.0	36.4	0	1,094.8
Alaska	24.5	18	21,370.1 <u>3/</u>	194.8	127	35,512.0
Arizona	40.9	1	6,717.0	263.6	0	3,100.9
Arkansas	34.8	0	3,017.0	132.5	0	3,284.2
California	238.1	12	47,901.6	1,157.9	6	33,351.0
Colorado	33.8	6	9,647.4	136.0	0	477.2
Florida	15.6	1	1,215.0	40.7	0	1,094.8
Georgia	27.5	2	2,656.0	52.8	0	1,277.2
Idaho	226.6	11	22,816.7	549.4	0	9,741.3
Illinois	4.2	0	314.5	8.0	0	61.8
Indiana	0	0	157.2	1.8	0	35.9
Kentucky	19.2	0	1,652.0	20.4	0	547.4
Louisiana	10.5	4	1,524.0	80.1	0	2,919.4
Maine	0	0	59.4	0.5	0	7.6
Michigan	23.2	4	2,194.1	78.7	0	309.2
Minnesota	55.3	1	4,571.8	62.8	0	618.3
Mississippi	72.5	0	1,623.0	44.7	0	1,277.2
Missouri	38.4	0	1,729.6	58.2	0	328.0
Montana	216.0	9	21,313.5	454.0	0	7,778.4
Nebraska	0	0	0.5	0	0	0
Nevada	0	3	332.6	0	0	0
New Hampshire	3.0	5	815.7	5.7	0	164.9
New Mexico	12.9	2	4,269.0	161.5	0	2,744.1
North Carolina	48.9	4	4,048.0	38.7	0	912.3
North Dakota	0	0	15.5	0	0	0
Ohio	0	0	34.7	0	0	0
Oklahoma	18.2	0	777.0	2.1	0	182.5
Oregon	279.3	6	54,222.0	1,346.4	1	63,073.0
Pennsylvania	2.2	0	648.9	18.5	0	391.6
Puerto Rico	0	0	39.0	0	0	0

See footnotes at end of table.

Table 40.--Road and bridge construction and reconstruction by State--fiscal year 1982--Continued

State, Territory, or Commonwealth <u>1/</u>	From appropriated funds			By timber purchasers		
	Roads	Bridges	Cost	Roads <u>2/</u>	Bridges	Cost
	<u>Miles</u>	<u>Number</u>	<u>1,000 dollars</u>	<u>Miles</u>	<u>Number</u>	<u>1,000 dollars</u>
South Carolina	17.0	2	1,053.0	77.3	0	1,642.1
South Dakota	21.6	1	1,586.6	83.5	0	533.9
Tennessee	23.0	4	1,758.0	49.3	0	1,277.2
Texas	16.2	0	1,195.0	42.9	0	2,007.1
Utah	28.4	5	3,080.3	16.2	0	295.8
Vermont	2.8	4	707.2	0	0	0
Virginia	88.9	1	3,604.0	79.0	0	729.8
Washington	87.7	4	26,027.0	202.7	1	16,484.0
West Virginia	17.5	0	1,745.6	1.3	0	20.0
Wisconsin	57.9	1	3,573.6	17.2	0	123.7
Wyoming	39.9	7	5,517.2	96.1	0	467.4
Total	1,867.0	120	226,894.3	5,611.7	135	193,866.0

1/ States not listed had no Forest Service road programs in 1982.

2/ Does not include 1,251.4 miles turned back to Forest Service for construction.

3/ Includes \$20,894 of Tongass Timber Supply Fund.

Table 41.--Timber purchaser roads constructed by the Forest Service by State--fiscal year 1982

State or Commonwealth	Roads Constructed	Cost
	<u>Miles</u>	<u>1,000 dollars</u>
Alabama	2.6	50.0
Arizona	121.3	1,738.0
Arkansas	44.5	1,626.0
California	271.8	5,640.0
Colorado	26.4	397.7
Florida	3.7	36.0
Idaho	123.7	3,699.4
Illinois	4.9	84.8
Louisiana	10.0	228.0
Minnesota	.7	25.5
Mississippi	13.1	468.1
Montana	107.0	1,355.4
New Hampshire	4.5	144.0
New Mexico	5.7	180.0
Oklahoma	13.3	499.0
Oregon	234.2	10,500.0
Pennsylvania	8.5	244.7
South Dakota	49.2	535.8
Texas	23.5	661.0
Utah	18.7	422.2
Vermont	2.3	76.3
Washington	133.1	11,804.0
West Virginia	7.2	271.2
Wyoming	21.5	311.5
Total	1,251.4	40,998.6

1/ States not listed had no timber purchaser roads constructed by the Forest Service in 1982.

Table 42.--State and Private Forestry funding--fiscal years 1980-82

	<u>Actual</u>	1982 RPA <u>1/</u>	Percent of RPA	1981 <u>1/</u>	1980 <u>1/</u>
		<u>1,000 constant 1982 dollars</u>			
Forest Pest Management	23,760 <u>2/</u>	27,338	87	22,843	23,499
Rural Fire Prevention and Control	14,193	27,464	52	21,102	25,404
Rural Forestry Assistance	16,338	28,797	57	18,305	15,268
Urban Forestry Assistance	1,696	-- <u>3/</u>	--	1,879	4,095
Assistance in Management, Planning, and Technology Implementation	4,488	7,199	62	4,978	4,262
General Forestry Assistance	5,080	6,584	77	7,255	10,656
Total	65,555	97,382	67	76,362	83,184

1/ In order that a comparison may be made with 1982, general administration has been eliminated from individual line items. Total appropriated general administration funds are included in the "General Administration" line item on Table 2.

2/ Includes \$1,407,000 reprogrammed from Timber Sales Administration (Helistat) to Forest Pest Management (Gypsy Moth).

3/ -- = not applicable.

Table 43.--Summary of State and Private Forestry accomplishments compared to RPA and funded output levels--fiscal year 1982 appropriated accounts

	Unit of measure	1/ RPA	Output Level		Accomplishment comparison		
			Funded	Actual	Percent of RPA	Change from funded level	Percent of funded level
Cooperative Resource Protection:							
Forest Pest Management 2/							
Insect and disease management surveys	MM acres	493	548	660	134	+155	120 3/
Insect and disease suppression	MM acres	-- 4/	1.6	2.7	--	+1.1	168 3/
Insect and disease special projects	No. of Projects	--	27	36	--	+9	133 3/
Cooperative Resource Management:							
Rural Forestry Assistance							
Forest land management plans	MM acres	3.6	3.6	3.6	100	0	100
Timber prepared for harvest	MM cubic feet	274	163.0	248.7	91	+85.7	153
Reforestation 5/	M acres	926	380.0	545.5	59	+165.5	144
Timber stand improvement 5/	M acres	614	179.0	307.9	50	+128.9	172
Dispersed recreation development	M acres	157	68.0	139.0	89	+71.0	204
Wildlife habitat improvement	M acres	376	114.0	350.4	93	+236.4	307
Forested range improvement	M acres	114	34.0	128.3	113	+94.3	377
Woodland owners assisted	M owners	219	164.0	141.5	65	-22.5	86
Improved wood utilization	MM cubic feet	159	143.0	137.6	87	-5.4	96
Seedling production	MM seedlings	--	689.0	796.2	--	+107.2	116
Urban Forestry Assistance	Urban areas assisted	--	3,156.0	3,443.0	--	+287	109
Assistance in Management, Planning, and Technology Implementation							
State forest resource planning	MM acres	138	138	217	157	+79	136
Management assistance	Number assists	152	158	222	146	+64	141

1/ M = thousand, MM = million.

2/ Includes accomplishments on National Forest System and other Federal lands, as well as State and Private lands.

3/ Reflects accomplishments using appropriated funds as well as \$3.3 million in reprogrammed, carryover, and allocated funds in 1982.

4/ -- = Not applicable; goals for these items were not included in the RPA.

5/ Includes Forestry Incentives Program and Agricultural Conservation Program accomplishments.

Table 44. --Summary of State and Private Forestry funding and accomplishments compared to RPA and funded output level--fiscal year 1982 transfer accounts

	1982 Funding 1,000 dollars	Unit of 1/ Measure	RPA	Output level		Accomplishment comparison	
				Funded	Accomplished	Change from funded level	Percent of funded level
Rural Community Fire 2/ Protection, FmHA	3,250	Approved applications	-- 3/	2,522	2,813	+291	110
Watershed and Flood Prevention, SCS	5,105	Projects	185	81 4/	81	0	100
Watershed Planning, SCS	307	Plans	135	51 4/	51	0	100
Resource Conservation and Development, SCS	722	Projects	74	66 4/	66	0	100
River Basin Surveys & Investigations, SCS	1,484	Plans	46	47 4/	47	0	100
Forestry Incentives Program, ASCS:	12,500 5/	M acres	6/	6/	155.2	--	--
Reforestation Timber stand improvement		M acres	6/	6/	74.3	--	--
Agricultural Conservation Program, ASCS:	6,729 5/	M acres	6/	6/	56.2	--	--
Reforestation Timber stand improvement		M acres	6/	6/	54.3	--	--
Total	30,097						

1/ M = Thousand

2/ Program first authorized after RPA; therefore, no RPA figures shown.

3/ -- = not applicable.

4/ Level reflects decrease in funding for forestry aspects of SCS projects.

5/ Includes both technical assistance and cost share funds allocated for the Forestry Incentives and Agricultural Conservation Programs (administered jointly by ASCS and FS).

6/ RPA and funded targets for Forestry Incentives and Agricultural Conservation Programs were included in a total with those of Rural Forestry Assistance (see Table 43).

Table 45.—1982 Pesticide Use Report

Common name	Target pest/ purpose	Quantity used/treated	
		Pounds <u>1/</u>	Units <u>2/</u>
<u>Herbicides:</u>			
Asulam	Conifer Release	90.00	38.00 (A)
Atrazine	Conifer Release	14,977.00	3,987.00 (A)
	Site Preparation	15,454.00	3,865.00 (A)
Dalapon	Site Preparation	296.00	53.00 (A)
Dicamba	Firebreak Management	277.00	198.00 (A)
	Rights-of-way	51.00	28.00 (A)
Fosamine Ammonium	Conifer Release	608.00	202.00 (A)
	Rights-of-way	40.00	4.00 (A)
Glyphosate	Conifer Release	5,869.00	3,999.00 (A)
	Site Preparation	4,989.00	2,541.00 (A)
Hexazinone	Conifer Release	2,007.00	1,267.00 (A)
	Site Preparation	3,241.00	1,795.00 (A)
Picloram	Conifer Release	7.00	14.00 (A)
	Noxious Weeds	9.00	37.00 (A)
	Rights-of-way	277.00	482.00 (A)
	Site Preparation	342.00	107.00 (A)
Triclopyr	Conifer Release	2,496.00	1,291.00 (A)
	Rights-of-way	753.00	225.00 (A)
	Site Preparation	2,042.00	929.00 (A)
2,4-D	Conifer Release	32,828.00	13,541.00 (A)
	Firebreak Management	527.00	198.00 (A)
	Noxious Weeds	71.00	37.00 (A)
	Range Improvement	27,374.00	17,146.00 (A)
	Rights-of-way	1,138.00	510.00 (A)
	Site Preparation	8,743.00	2,944.00 (A)
	Wildlife Habitat Improvement	8.00	6.00 (A)
	Site Preparation	214.00	107.00 (A)
2,4-D/Picloram 4:1	Site Preparation	1,386.00	198.00 (A)
2,4-D/2,4-DP 2:2	Site Preparation	4,312.00	1,078.00 (A)
Amitrole	Conifer Release	20.00	40.00
	General Weed Control	10.00	7.00
	Noxious Weeds	467.00	199.00
	Poisonous Plant Control	47.00	45.00
	Rights-of-way	1,531.00	541.00
Ammonium Methane Arsonate	Rights-of-way	40.00	80.00
Ammonium Sulfamate	Rights-of-way	1,130.00	69.00
Asulam	Conifer Release	150.00	70.00
	Rights-of-way	23.00	7.00
	Site Preparation	3.00	8.00
Atrazine	Conifer Release	2,550.50	926.00
	General Weed Control	1,014.00	12.00
	Noxious Weeds	124.00	77.00
	Nursery Weeds	39.00	14.00
	Rights-of-way	1,620.00	488.00
	Rights-of-way	750.00	1,500.00 Posts
	Site Preparation	6,804.50	2,833.00

See footnotes at end of table.

Table 45.--1982 Pesticide Use Report--Continued

Common name	Target pest/ purpose	Quantity used/treated	
		Pounds <u>1/</u>	Units <u>2/</u>
<u>Herbicides: (Cont.)</u>			
Benefin	General Weed Control	6.00	3.00
Bifenox	General Weed Control	205.00	65.70
	Noxious Weeds	87.00	35.00
	Nursery Weeds	984.00	243.00
Bromacil	General Weed Control	608.00	32.00
	General Weed Control	91.00	98.00 Sites
	Rights-of-way	503.00	156.00
Bromacil/Diuron	General Weed Control	45.00	130.00 Sites
	Rights-of-way	238.00	55.50
Cacodylic Acid	Conifer Release	66.00	52.00
	Rights-of-way	232.00	44.00
Cyprazine	General Weed Control	56.00	47.00
Dalapon	Conifer Release	409.00	855.00
	Grass Control	78.00	6.00
	Research	44.00	5.00
	Site Preparation	19,914.00	5,321.00
DCPA	General Weed Control	185.00	30.00
	Nursery Weeds	1,597.00	166.61
Dicamba	Conifer Release	250.00	771.00
	Noxious Weeds	1,271.50	735.50
	Range Improvement	185.00	111.00
	Research	1.00	1.00
	Rights-of-way	265.00	266.00
	Site Preparation	1,857.00	760.00
	Wildlife Habitat Improvement	53.00	61.00
Dichlobenil	General Weed Control	1.00	1.00
Diphenamid	General Weed Control	24.00	3.00
	Nursery Weeds	275.00	31.32
Diquat	Aquatic Weed Control	30.00	10.00
	Grass Control	9.00	3.00
	Rights-of-way	6.00	9.00
Diuron	General Weed Control	13.00	13.00 Sites
	Rights-of-way	2,385.00	488.00
Endothall	Aquatic Weed Control	304.00	13.00
EPTC	General Weed Control	362.00	59.00
Fosamine Ammonium	Conifer Release	9.00	1.00
	Rights-of-way	3,710.00	1,239.00
	Wildlife Habitat Improvement	111.00	84.00

See footnotes at end of table.

Table 45.--1982 Pesticide Use Report--Continued

Common name	Target pest/ purpose	Quantity used/treated	
		Pounds <u>1/</u>	Units <u>2/</u>
<u>Herbicides: (Cont.)</u>			
Glyphosate	Conifer Release	2,800.68	3,071.00
	Firebreak Management	128.00	62.00
	General Weed Control	356.00	205.50
	General Weed Control	6.00	1,000.00
	Grass Control	7.00	40.00
	Noxious Weeds	1,431.00	928.00
	Nursery Weeds	294.00	116.00
	Range Improvement	297.00	322.00
	Research	85.60	71.35
	Rights-of-way	1,285.00	688.00
	Site Preparation	11,190.40	8,333.25
	Wildlife Habitat	222.00	70.00
	Improvement		
Hexazinone	Conifer Release	7,060.00	5,871.00
	General Weed Control	11.00	4.00
	Nursery Weeds	30.00	15.00
	Range Improvement	4.00	4.00
	Research	13.20	7.00
	Rights-of-way	407.00	225.00
	Site Preparation	1,458.00	863.00
	Wildlife Habitat	1,367.00	198.00
	Improvement		
Linuron	Research	2.50	5.00
Maleic Hydrazide	Rights-of-way	52.00	13.00
Mefluidide	Rights-of-way	96.00	50.00
Metolachlor	General Weed Control	108.00	27.00
MCPA	Rights-of-way	18.00	4.00
MSMA	General Weed Control	4.00	6.00
	Rights-of-way	180.00	59.00
Napropamide	Nursery Weeds	64.50	34.00
Oust	Rights-of-way	1.00	16.00
Oxyfluourfen	General Weed Control	21.70	20.00
	Nursery Weeds	186.00	299.00
Paraquat	Conifer Release	16.00	4.00
	General Weed Control	29.00	30.00
	Range Improvement	47.00	95.00
Picloram	Conifer Release	5,020.00	12,513.00
	General Weed Control	1,052.00	301.00
	Noxious Weeds	9,144.00	4,523.55
	Range Improvement	8,615.00	5,865.00
	Research	6.60	10.50
	Rights-of-way	371.00	606.00
	Site Preparation	13,834.00	27,704.00
	Thinning	31.00	304.00
	Wildlife Habitat	2,261.00	2,067.00
	Improvement		

See footnotes at end of table.

Table 45.--1982 Pesticide Use Report--Continued

Common name	Target pest/ purpose	Quantity used/treated		
		Pounds <u>1/</u>	Units <u>2/</u>	
<u>Herbicides: (Cont.)</u>				
Prometon	General Weed Control	131.00	5.00	
	Noxious Weeds	2.00	1.00	
	Research	185.00	4.00	
	Rights-of-way	4,003.00	117.00	
Simazine	Conifer Release	558.00	67.00	
	Firebreak Management	16.00	3.00	
	General Weed Control	178.80	100.50	
	General Weed Control	33.00	23.00	
	Grass Control	246.00	20.00	
	Noxious Weeds	64.00	22.00	
	Nursery Weeds	2.00	.20	
	Range Improvement	6.00	20.00	
	Research	81.00	20.25	
	Rights-of-way	4,546.00	3,055.00	
	Site Preparation	99.00	22.00	
	Sodium Chlorate	Rights-of-way	10.00	1.00
	Sodium Metaborate	Rights-of-way	70.00	1.00
Tetra				
Tebuthiuron	Range Improvement	441.00	700.00	
	Rights-of-way	1,243.24	419.00	
	Rights-of-way	100.00	25.00	
Triclopyr	Conifer Release	119.00	237.00	
	General Weed Control	6.00	1.00	
	Research	5.00	4.30	
	Rights-of-way	407.00	254.00	
	Site Preparation	46.00	71.03	
2,4-D	Aquatic Weed Control	124.00	13.00	
	Aquatic Weed Control	308.00	21.00	
			Acre Feet	
	Conifer Release	54,982.00	27,820.00	
	General Weed Control	1,589.50	1,327.00	
	Noxious Weeds	8,805.50	6,831.00	
	Nursery Weeds	125.40	105.00	
	Poisonous Plant	28.00	6.00	
	Control			
	Poisonous Plant	1.00	3.00	
	Control		Sites	
	Range Improvement	6,113.00	4,347.00	
	Research	57.40	43.30	
	Rights-of-way	10,739.00	4,183.00	
	Site Preparation	54,871.00	33,583.00	
	Thinning	3,439.00	1,676.00	
	Wildlife Habitat	3,746.00	3,016.00	
	Improvement			

See footnotes at end of table.

Table 45.--1982 Pesticide Use Report--Continued

Common name	Target pest/ purpose	Quantity used/treated	
		Pounds <u>1/</u>	Units <u>2/</u>
<u>Herbicides: (Cont.)</u>			
2,4-DP	Conifer Release	2,365.00	1,124.00
	General Weed Control	103.00	120.00
2,4-D/Dicamba 2:1	Rights-of-way	2,315.00	875.00
	Noxious Weeds	4,987.00	2,312.20
	Poisonous Plant Control	100.00	120.00
	Range Improvement	82.00	47.00
	Site Preparation	390.00	70.00
	Wildlife Habitat Improvement	7.00	209.00
	2,4-D/Dicamba 3:1	Noxious Weeds	75.00
Range Improvements		168.00	84.00
2,4-D/Picloram 4:1	Conifer Release	1,786.00	1,943.00
	Firebreak Management	255.00	140.00
	Noxious Weeds	2,495.25	1,509.80
	Range Improvement	19.00	10.00
	Research	1.25	1.40
	Rights-of-way	1,015.00	374.00
	Site Preparation	18.00	6.00
	Thinning	588.00	427.00
	Wildlife Habitat Improvement	561.00	645.00
2,4-D/Picloram 2:1	Noxious Weeds	30.00	20.00
2,4-D/2,4-DP 2:2	General Weed Control	14.00	32.00
	Rights-of-way	400.00	100.00
	Wildlife Habitat Improvement	6.00	2.00
	2,3,6-TCA	General Weed Control	5.00
Sodium Metaborate	Rights-of-way	17.00	5.00
Total 1982 Herbicide Use (Including Aerial Use)		428,161.42	248,082.76
<u>Total Aerial Use</u>		<u>130,426.00</u>	<u>56,857.00</u>
See footnotes at end of table.			

Table 45.--1982 Pesticide Use Report--Continued

Common name	Target pest/ purpose	Quantity used/treated	
		Pounds <u>1/</u>	Units <u>2/</u>
<u>Insecticides:</u>			
Acephate	Western Spruce Budworm	4,598.00	9,195.00 (A)
Azinphos-Methyl	Seed & Cone Insects	1,300.00	5,040.00 (A) Trees
<u>Bacillus</u> <u>thuringiensis</u>	Western Spruce Budworm	8,392.00	1,049.00 (A) BIUs
Carbaryl	Mormon Cricket Control	1,680.00	3,360.00 (A)
	Western Spruce Budworm	189,982.00	189,982.00 (A)
Dimethoate	Seed & Cone Insects	18.00	10.00 (A)
Trichlorfon	Gypsy Moth	100.00	100.00 (A)
Acephate	Elm Leaf Beetle	3.00	93.00
	Seed & Cone Insects	3.00	10.00
	Seed & Cone Insects	8.00	20.00 Trees
Azinphos-Methyl	Seed & Cone Insects	2,214.00	16,270.00 Trees
<u>Bacillus</u> <u>thuringiensis/</u> <u>isralensis</u>	Mosquitoes	17.50	50.00 BIUs
Carbaryl	Bark Beetles	112.00	375.00 Trees
	Cottonwood Leaf Beetle	9.00	9.00
	Cutworms	18.00	12.00
	Fleas	66.00	208.00
	Grasshoppers	180.00	120.00
	Mountain Pine Beetle	5,656.00	23,810.00 Trees
	Nursery Insects	40.00	40.00
	Western Pine Beetle	8.25	25.00 Trees
	Western Pine Beetle/ Research	115.00	336.00 Trees
Carbofuran	Seed & Cone Insects	332.20	21.00
	Seed & Cone Insects	5,357.00	30,714.00 Trees
	Tip Moths	10.00	500.00 Trees
Chlordane	Ants	6.00	5.00
	Termites	35.00	7.00 Building
Chlorpyrifos	General Insect Control	20.00	.20
	Mosquitoes	100.00	20.00
	Southern Pine Beetle	12.00	600.00 Trees
Coumaphos	Cattle Ticks & Lice	225.00	900.00 Cattle
	General Insect Control	3.00	5.00
	General Insect Control	12.00	42.00

See footnotes at end of table.

Table 45.--1982 Pesticide Use Report--Continued

Common name	Target pest/ purpose	Quantity used/treated	
		Pounds <u>1/</u>	Units <u>2/</u>
<u>Insecticides: (Cont.)</u>			
Diazinon	Bagworm	3.00	20.00
	Borers	4.00	3.00
	Cutworms	53.00	100.00
	General Insect Control	1.00	2.00
	Nursery Insects	92.00	17.00
	Weevils	1.00	.46
Dimethoate	Pine Tip Moths	5.00	11.00
	Seed & Cone Insects	4.00	20.00 Trees
	Tip Moths	1.00	1,000.00 Trees
Ethylene Dibromide	Mountain Pine Beetle	1,833.00	43,170.00 Trees
Fatty Acids	Balsam Woolly Aphid	21.00	1,000.00 Trees
Fenvalerate	Seed & Cone Insects	115.00	11,586.00 Trees
Heptachlor	Termites	18.00	7.00
			Building
Lindane	Balsam Woolly Aphid	75.00	1,200.00 Trees
	Bark Beetles	5.00	75.00
	Bark Beetles	8.00	100.00 Trees
	Borers	2.00	1.00
	Mountain Pine Beetle	365.00	22,378.00 Trees
	Powderpost Beetles	84.00	9.00
			Building
Malathion	Southern Pine Beetle	69.00	8,750.00 Trees
	Aphids	.88	1,580.00 Trees
	General Insect Control	1.00	20.00
			Latrines
	Mosquitoes	25.00	50.00
Methidathion	Weevils	10.00	13.00
Methomyl	General Insect Control	99.00	20.00
Methoxychlor	General Insect Control	2.00	3.00
Oxydemeton Methyl	Seed & Cone Insects	37.00	861.00 Trees
Pyrethrin	General Insect Control	1.10	20.00
			Latrines
Petroleum Oil	Mosquitoes	1,563.00	101.00
	Scale Insects	7.00	98.00
Temephos	Mosquitoes	736.00	317.00
Tetrachlorvinphos	General Insect Control	44.00	27.00
Toxaphene	Cattle Ticks & Lice	720.00	6,000.00
			Cattle
	General Insect Control	6.00	92.00
			Cattle
Total 1982			
Insecticide Use			
(Including Aerial			
Use)		218,233.43	205,147.66 <u>3/</u>
Total Aerial Use		197,678.00	203,696.00

See footnotes at end of table.

Table 45.--1982 Pesticide Use Report--Continued

Common name	Target pest/ purpose	Quantity used/treated	
		Pounds <u>1/</u>	Units <u>2/</u>
<u>Algicides:</u>			
Copper	Aquatic Weed Control	1.00	7.00
Copper Sulfate	Aquatic Weed Control	423.20	23.50
Total 1982 Algicide Use		424.20	30.50
<u>Fungicides and Fumigants:</u>			
Benomyl	Botrytis	53.70	107.00
	Damping Off	10.00	110,000.00
			Seedlings
	Fusarium	97.00	3.50
	Nursery Blight	147.00	197.00
	Nursery Fungi	5.00	150,000.00
	Walnut Anthracnose/ Research	1.30	20.00
Borax	Fomes annosus	5,313.00	6,783.00
	Fomes annosus	55.00	1,140.00
			Stumps
Bordeaux Mixture	Fomes annosus	15.85	244.00
	Tip Blight	2.71	1.30
Captafol	Walnut Anthracnose/ Research	3.90	20.00
			Trees
Captan	Damping off	59.24	22.13
	Nursery Fungi	180.50	92.10
	Nursery Fungi	2.26	6,207.70
			Lbs. of Seed
Chloropicrin	Nursery Fungi	6.00	150,000.00
	Ants	4.00	700.00
	Nursery Fungi	8,483.00	109.00
Chlorothalonil	Botrytis	17.50	12.20
	Nursery Blight	2.00	2.00
	Nursery Fungi	145.70	139.00
	Tip Blight	141.00	88.00
	Walnut Anthracnose/ Research	3.80	20.00
			Trees
Dazomet	Nursery Fungi	83.00	.60
	Nursery Fungi	5.00	36.00
			Cold

See footnotes at end of table.

Table 45.--1982 Pesticide Use Report--Continued

Common name	Target pest/ purpose	Quantity used/treated	
		Pounds <u>1/</u>	Units <u>2/</u>
<u>Fungicides and Fumigants: (Cont.)</u>			
DCNA	Botrytis	18.00	1.23
	Nursery Fungi	1.00	133,000.00 Trees
Dichloropropene	Nursery Fungi	15,249.00	65.00
Dodine	Walnut Anthracnose/ Research	1.60	20.00 Trees
Ethazol	Nursery Fungi	4.20	0.10
	Nursery Fungi	12.00	133,000.00 Trees
Fenaminosulf	Damping off	1.70 ozs	300.00 Trees
Ferbam	Nursery Fungi	1,413.00	62.00
Maneb	Nursery Fungi	597.00	234.00
	Walnut Anthracnose/ Research	3.50	20.00 Trees
Metalaxyl	Fomes annosus	1.18	4.18
	Nursery Fungi	1.00	170,000.00 Trees
Methyl Bromide	Ants	160.00	700.00
	Nursery Fungi	53,081.00	250.02
TCMTB	Nursery Fungi	1.30	700.00 Lbs of Seed
Thiophanate-Methyl	Walnut Anthracnose/ Research	2.80	20.00 Trees
Thiram	Damping off	20.00	1.00
	Damping off	9.30	5,888.00 Lbs of Seed
	Damping off	10.00	289.00 Lbs of Seed
Triadimefon	Nursery Fungi	60.00	62.00
Vorlex	Nursery Fungi	2,250.00	9.00
Zineb	Shot Hole Disease	14.00	9.00
Total 1982 Fungicide and Fumigant Use		87,747.10	9,654.36 <u>4/</u>
See footnotes at end of table.			

Table 45.--1982 Pesticide Use Report--Continued

Common name	Target pest/ purpose	Quantity used/treated	
		Pounds <u>1/</u>	Units <u>2/</u>
<u>Predacides and Pisicides:</u>			
Antimycin	Fish	1.75	2.00
			Stream Miles
Rotenone	Fish	321.00	222.00
	Fish	5.00	12.00
			Stream Miles
	Fish	12.00	40.00
			Stream Miles
Sodium Cyanide	Coyotes	0.01	5.00 Bait
			Stations
	Coyotes	1,200.00	30,000.00
		grams	
Total 1982 Predacide and Pisicide Use		339.76	30,222.00
<u>Repellents:</u>			
Bone Tar Oil	Commensal Rodents	118.00	225.00
Putrescent Egg	Commensal Rodents	384.00	12,160.00
Solids	Deer	13.00	20.00
Thiram	Commensal Rodents	10.00	100.00
	Birds	690.00	17,540.00
Total 1982 Repellent Use		1,215.00	30,045.00
<u>Rodenticides:</u>			
Diphacinone	Commensal Rodents	100.00	20.00
Rhoplex	Ground Squirrels	4.00	6.00 Bait
			Stations
Strychnine	Pocket Gophers	957.16	47,805.00
	Pocket Gophers	3.14	55.00
		ozs	
Warfarin	Commensal Rodents	8.00	8.00 Bait
			Stations
Zinc Phosphide	Commensal Rodents	135.10	130.00
	Pocket Gophers	239.00	13,807.00
Total 1982 Rodenticide Use		1,443.26	61,817.00
See footnotes at end of table.			

Table 45.--1982 Pesticide Use Report--Continued

Common name	Target pest/ purpose	Quantity used/treated	
		Pounds <u>1/</u>	Units <u>2/</u>
<hr/>			
<u>Wood Preservatives:</u>			
Pentachlorophenol	General Insect Control	1.00	1.00
		<hr/>	Bridge
Total 1982 Wood			
Preservative Use		1.00	1.00
			Bridge
<hr/>			
Grand Total Pesticide			
Use		737,565.17	584,999.28

1/ Quantities expressed in pounds unless otherwise indicated.

2/ Units treated are expressed in acres unless otherwise indicated.
Aerial applications are indicated by (A). All others are ground applications.

3/ Plus 7,034 cattle, 168,335 trees, and 23 buildings.

4/ Plus 586,624 trees, 110,000 seedlings, and 12,384.7 pounds of seed.

Table 46.--Summary of selected cooperative forest management and processing program activities--selected fiscal years

	Woodland owners assisted	Timber sale assistance-- volume marked MBF ^{1/}	Loggers and processors assisted
1945	8,093	411,330	0
1950	22,828	518,566	0
1955	34,828	549,373	8,182
1960	82,188	569,178	8,099
1965	99,074	716,950	9,248
1970	115,197	1,225,520	13,620
1971	127,828	860,950	14,627
1972	274,001	955,627	5,290
1973	106,422	1,578,664	4,855
1974	117,990	907,311	5,353
1975	140,940	677,532	5,405
1976	105,184	596,599	15,318
1976-77 (T.Q.) ^{2/}	25,253	220,649	5,849
1977	133,619	921,171	29,101
1978	165,329	1,120,743	12,749
1979	183,585	755,103	11,393
1980	176,385	870,964	11,582
1981	164,279	683,181	18,609
1982	141,472	841,475	15,470

^{1/} MBF = thousand board feet.

^{2/} Transition quarter.

Table 47.--Wildfires on State and private lands protected under the Cooperative Forestry Assistance Act (P.L. 95-313)--calendar year 1981

State, Territory, or Commonwealth 1/	Area protected 1,000 acres	Human-caused fires	Human-caused area burned acres
Alabama	25,029	10,117	300,527
Alaska	5,984	211	172,887
Arizona	18,328	132	590
Arkansas	20,698	3,111	90,591
California	33,014	9,997	255,423
Colorado	25,958	1,342	9,445
Connecticut	2,390	2,501	3,918
Delaware	557	52	9,916
Florida	26,135	12,381	488,406
Georgia	27,279	16,407	94,763
Guam	816	505	6,286
Hawaii	3,306	491	9,765
Idaho	7,126	244	75,482
Illinois	8,453	238	5,355
Indiana	7,328	556	9,668
Iowa	7,612	3,894	4,215
Kansas	19,793	3,139	42,215
Kentucky	16,864	4,298	294,380
Louisiana	20,939	8,475	106,241
Maine	17,743	1,003	3,639
Maryland	3,700	1,569	24,154
Massachusetts	3,581	10,123	11,936
Michigan	19,675	828	7,592
Minnesota	22,830	1,783	50,443
Mississippi	19,858	12,355	233,612
Missouri	23,777	3,795	43,984
Montana	34,838	163	3,708
Nebraska	27,154	1,375	20,785
Nevada	8,777	206	8,560
New Hampshire	4,631	750	536
New Jersey	2,705	2,354	14,428
New Mexico	40,199	141	9,068
New York	16,957	635	5,458
North Carolina	20,817	8,619	118,728
North Dakota	28,067	218	4,889
Ohio	5,823	1,774	9,300
Oklahoma	5,087	1,184	30,137
Oregon	13,099	724	11,744
Pennsylvania	19,541	1,821	13,431
Rhode Island	5,120	529	832

See footnote at end of table.

Table 47.--Wildfires on State and private lands protected under the Cooperative Forestry Assistance Act (P.L. 95-313)--calendar year 1981--Continued

State, Territory, or Commonwealth 1/	Area protected	Human-caused fires	Human-caused area burned
	<u>1,000 acres</u>		<u>acres</u>
South Carolina	13,289	13,840	97,254
South Dakota	25,816	1,351	20,406
Tennessee	12,477	5,504	69,809
Texas	22,122	2,153	27,512
Utah	14,724	232	12,967
Vermont	4,638	216	863
Virginia	18,518	5,339	18,737
Washington	13,177	577	2,103
West Virginia	12,833	2,991	85,802
Wisconsin	18,898	1,949	6,279
Wyoming	13,177	560	4,486
Total	791,257	164,752	2,953,255

1/ States not listed have no lands protected under the Act.

Table 48.--Summary of selected cooperative forest management and processing activities by Region--fiscal year 1982

Assistance activity	Unit of measure ^{1/}	Regions				
		Northern	Rocky Mountain	South-western	Inter-mountain	Pacific Southwest
Woodland owners assisted	Number	1,787	2,429	480	589	3,502
Assists to loggers and processors	Number	87	812	48	68	178
Forest management plans prepared	Number	399	579	101	77	331
	M acres	32.2	38.2	320.9	51.4	62.7
Reforestation:						
Planting	Acres	2,261	743	321	171	6,709
Seeding	Acres	0	14	0	0	0
Management for natural regeneration	Acres	0	0	3,079	500	215
Timber stand improvement	Acres	1,463	3,111	1,332	10	8,316
Outdoor recreation development	Acres	1,068	3,865	5,187	10,099	4,145
Wildlife habitat development	Acres	10	9,135	14,711	2,266	23,141
Forested range improvement	Acres	1,319	5,567	41,954	3,622	20,876
Timber sale assistance volume harvested	M cubic feet	2,944	5,654	2,531	496	543
Improved utilization:						
Harvesting	M cubic feet	1,302	1,930	414	186	2,286
Primary processing	M cubic feet	3,692	969	494	251	2,365
Secondary processing and drying	M cubic feet	100	372	0	69	674
Fuel and byproducts	M cubic feet	116	1,675	293	191	1,875
Urban forestry assistance activities	Urban areas assisted	72	261	12	58	259
Referrals to consulting foresters	Number	26	237	9	9	1,005

^{1/} M = thousand.

Pacific Northwest	Regions		North- eastern Area	Total
	Alaska	Southern Region		
10,802	500	58,353	63,030	141,472
157	33	4,186	9,901	15,470
1,067	16	30,211	21,829	54,610
78.4	11.4	1,890.1	1,138.6	3,623.9
21,763	223	294,604	42,302	369,097
187	5	10,512	797	11,515
101,301	960	39,931	18,926	164,912
20,547	380	183,730	88,969	307,858
4	350	64,762	49,501	138,981
2,563	6,141	189,252	103,132	350,351
2,294	0	48,073	4,570	128,275
9,559	16,819	150,135	59,989	248,670
6,477	5	13,091	16,961	42,652
10,120	532	13,438	13,619	45,480
0	10	4,693	4,144	10,062
0	202	19,832	15,202	39,386
58	3	706	2,014	3,443
374	22	4,119	5,716	11,517

Table 49.--Summary of selected cooperative forest management and processing activities by State--fiscal year 1982

State, Territory, or Commonwealth	Woodland owners assisted	Area receiving reforestation assistance	Area receiv- ing TSI 1/ assistance	Timber sale		Assists to loggers and processors	Improved utilization	State nursery production
				Acres	1,000 cubic feet			
Alabama	4,064	35,460	27,813	2,912	95	4,714	67,000	
Alaska	500	1,188	380	16,819	33	749	400	
Arizona	337	1,036	581	496	12	530	0	
Arkansas	944	15,325	6,900	6,397	50	4,260	31,422	
California	3,165	6,587	8,292	212	141	6,889	4,279	
Colorado	818	300	990	4,796	524	2,789	1,582	
Connecticut	762	1,683	1,108	462	13	624	2,100	
Delaware	823	1,622	265	857	7	659	750	
Florida	3,937	44,858	10,237	13,477	118	9,804	85,200	
Georgia	9,180	24,990	12,925	7,348	300	7,234	82,086	
Guam	37	7	22	0	0	0	33	
Hawaii	300	330	2	331	37	311	396	
Idaho	837	242	418	293	23	97	766	
Illinois	1,724	662	3,581	919	55	458	4,404	
Indiana	1,936	8,349	8,666	1,712	372	1,959	9,700	
Iowa	950	3,242	1,249	397	5	41	2,797	
Kansas	770	308	585	250	178	459	234	
Kentucky	1,484	1,366	6,462	1,542	108	2,448	9,429	
Louisiana	1,428	14,155	38,000	219	3	716	85,000	
Maine	2,089	2,097	3,507	3,131	592	6,213	1,827	
Maryland	2,846	5,421	1,538	1,113	29	408	3,584	
Massachusetts	3,360	5,431	8,788	6,208	14	4,922	0	
Michigan	874	5,050	4,418	869	19	921	8,728	
Minnesota	5,994	5,419	3,623	4,483	619	4,635	21,451	
Mississippi	12,155	54,040	28,156	9,382	155	2,666	84,461	

See footnote at end of table.

Table 49.--Summary of selected cooperative forest management and processing activities by State--fiscal year 1982--Continued

State, Territory, or Commonwealth	Woodland owners assisted	Area receiving reforestation assistance		Area receiv- ing TSI 1/ assistance		Timber sale assistance-- volume harvested		Assists to loggers and processors		Improved utilization		State nursery production	
		Acres	Acres	Acres	1,000 cubic feet	1,000 cubic feet	1,000 cubic feet	1,000 cubic feet	1,000 cubic feet	1,000 cubic feet	1,000 trees	1,000 trees	1,000 trees
Missouri	2,092	3,186	4,802	4,794	3,565	2,666	11,611						
Montana	379	872	1,015	2,651	64	5,113	1,015						
Nebraska	545	139	76	9	13	2	0						
Nevada	284	671	10	97	29	57	230						
New Hampshire	7,101	839	5,175	4,448	1,635	5,452	800						
New Jersey	1,310	1,122	2,897	982	299	2,403	362						
New Mexico	143	2,364	751	2,035	36	671	0						
New York	6,404	2,321	10,035	10,015	1,918	4,953	4,573						
North Carolina	4,970	51,681	2,132	27,914	162	10,038	57,677						
North Dakota	571	1,147	30	0	0	0	1,145						
Ohio	3,602	1,695	9,073	4,237	38	3,226	7,774						
Oklahoma	572	1,209	2,005	249	1	2	1,679						
Oregon	6,798	115,477	12,389	224	89	6,387	19,500						
Pennsylvania	3,005	3,082	3,588	1,212	388	2,545	4,038						
Puerto Rico	1,515	420	186	17	2	18	544						
Rhode Island	196	364	254	194	11	178	0						
South Carolina	2,478	22,295	7,633	3,853	14	1,003	48,791						
South Dakota	162	0	826	228	12	2	943						
Tennessee	1,647	2,739	613	1,826	42	1,266	16,678						
Texas	2,057	21,090	26,278	3,462	228	3,175	8,561						
Utah	305	0	0	399	39	640	600						
Vermont	3,132	362	3,335	4,985	241	2,528	260						
Virgin Islands	41	15	17	0	0	0	0						
Virginia	11,881	55,404	14,373	71,537	2,908	3,710	62,933						
Washington	4,004	7,774	8,158	9,335	68	10,210	19,000						
West Virginia	4,964	2,337	6,632	1,013	61	3,322	2,861						
Wisconsin	9,866	7,741	6,435	7,958	20	1,813	17,011						
Wyoming	134	10	634	371	85	1,694	0						
Total	141,472	545,524	307,858	248,670	15,470	137,580	796,215						

1/ TSI = timber stand improvement.

Table 50.--Works of improvement installed in watershed protection projects--fiscal years 1980-82 and total to date

	Unit of measure	1982	1981	1980	Total 1954-82
Channel improvement	Miles	-- 1/	--	--	6.6
Channel stabilization	Miles	--	--	--	13
Contour terrace and furrows	Miles	--	--	--	916.7
Area treated	Acres	--	--	--	14,409
Gully control and stabilization	Miles	--	0.8	--	195.1
Grade stabilization structures	Number	--	--	--	329.6
Critical area stabilization by tree planting and other measures	Acres	490	219	452.2	43,484.8
Forest road and roadbank stabilization	Miles	38	14.7	551.9	1,946
Area treated	Acres	24	27.2	2,138.4	5,950.3
Fire roads, trails, and firebreaks and fuelbreaks	Miles	28.6	61	21.7	1,621.6
Fire control water developments	Number	--	--	--	43
Fire towers	Number	--	--	--	8
Intensified fire protection	Acres	10,830	20,075	140.0	2,332,100
Heliports and helispots	Number	--	--	--	42
Mobile fire equipment	Number	--	--	--	60
Other fire control improvements	Number	4	--	--	462
Radio installations	Number	--	--	--	52
Forest watershed management					
Plans prepared	Number	1,052	3,790	1,322	23,931
Area included	Acres	52,294	60,353	90,612	2,102,962
Forest stand improvement	Acres	--	--	20	1,082,466
Proper harvest cutting	Acres	11,768	9,555	13,436	539,695
Range and grass seeding	Acres	27	739	121	48,377
Tree planting and seeding	Acres	7,653	7,693	8,289	292,197
Revegetation, surface mined areas	Acres	916	700	--	3,421
Woodland thinning and release	Acres	3,387	3,824	4,554	709,220
Woodland grazing control	Acres	884	1,113	857	291,135
Recreation area development	Acres	753	88	384	32,615
Wildlife habitat development	Acres	2,969	2,094	1,266	32,734
Wildlife ponds	Number	3	4	22	82

1/ -- = zero.

Table 51.--Works of improvement installed in flood prevention projects--fiscal years
1980-82 and total to date

	Unit of measure	1982	1981	1980	Total 1944-81
Structural measures:					
Access road construction	Miles	-- <u>1/</u>	6.0	9.0	160.0
Channel improvement	Miles	--	--	1.0	39.6
Channel stabilization	Miles	1	--	1.1	349.5
Diversion ditches	Feet	300	--	--	30,477.0
Floodwater retarding structures	Number	--	--	--	3.0
Grade stabilization structures	Number	--	574.0	--	1,690.0
Streambank stabilization	Miles	--	--	--	11.3
Land treatment measures:					
Critical area stabilization by tree planting and other measures	Acres	840	308.0	513.0	332,619.1
Forest road and roadbank Stabilization	Miles	77.9	478.0	213.3	2,622.8
Area treated	Acres	730	285.0	707.0	19,113.9
Forest watershed management Plans prepared	Number	1,933	1,169.0	1,133.0	22,041.0
Area included	Acres	56,566	82,553.0	70,294.0	2,064,501.0
Firebreaks and fuelbreaks	Miles	41	22.5	43.0	3,368.5
Fire roads and trails	Miles	--	38.0	13.0	576.6
Fire hazard reduction	Acres	2,025	587.0	--	12,712.3
Fire water developments	Number	--	--	2.0	185.0
Fire towers	Number	--	--	--	46.0
Heliports and helispots	Number	1	--	1.0	460.0
Mobile equipment	Number	--	--	1.0	120.0
Other fire improvements	Number	4	5.0	1.0	222.0
Permanent radio installations	Number	--	--	5.0	318.0
Proper harvest cutting	Acres	8,674	57,266.0	51,064.0	649,930.0
Forest stand improvement	Acres	--	490.0	--	660,954.0
Tree planting and seeding	Acres	5,841	8,506.0	9,492.0	513,884.0
Woodland thinning and release	Acres	2,669	5,704.0	1,185.0	452,031.0
Revegetation, surface mined areas	Acres	325	177.0	170.0	7,608.0
Woodland grazing control	Acres	614	3,567.0	1,795.0	189,949.0
Woodland owners assisted	Number	11,297	12,680.0	11,316.0	616,881.0

1/ -- = zero.

Table 52.--Research publications by major subject area in fiscal years 1981 and 1982

	Number of publications	
	1982	1981
Environmental Research:		
Watershed management	130	136
Wildlife	136	144
Range	50	46
Fisheries habitat	21	31
Forest recreation	60	71
Urban forestry	23	33
Disturbed areas rehabilitation	19	41
Subtotal	439	502
Insect and Disease Research:		
Insect detection and evaluation	78	54
Insect biology	79	106
Insect control and management strategies	103	92
Disease detection and evaluation	21	34
Disease biology	78	59
Disease control and management	32	45
Air pollution	11	13
Mycorrhizae	34	-- 1/
Wood products organisms	22	16
Subtotal	458	419
Fire and Atmospheric Sciences Research:		
Fire prevention, hazard reduction, and prescribed burning	24	22
Fire management methods and systems	24	13
Forest fire science	14	22
Ecological relations	16	29
Weather modification and weather effects	28	13
Subtotal	106	99
Timber Management Research:		
Biological relations	73	106
Silviculture	167	112
Management mensuration	60	91
Genetics and tree improvement	82	76
Special products	11	4
Subtotal	393	389

See footnotes at end of table.

Table 52.--Research publications by major subject area in fiscal years 1981 and 1982--Continued

	Number of publications	
	1982	1981
Economics and Marketing Research:		
Forest resource evaluation	92	88
Forest economics	122	60
Supply, demand, and price analysis	-- <u>1/</u>	34
Subtotal	214	182
Products and Engineering Research:		
Forest engineering systems	38	39
Wood engineering	49	44
Chemistry, fiber, and fuel products	72	71
Utilization potential and processing of wood	98	141
Protection of wood in use	14	-- <u>2/</u>
Subtotal	271	295
General	28	-- <u>2/</u>
Grand total	1,909	1,886

1/ This subject area was not reported separately in 1981.

2/ This subject area was combined with other subject areas in 1982.

Table 53.--Forest Research funding--fiscal years 1980-82

	1982		Percent of		
	Actual	RPA	RPA	1981	1980
<u>1,000 constant dollars</u>					
Appropriated funds:					
Land and resource protection research:					
Fire and atmospheric science	9,014	10,981	82	9,228	9,858
Forest insect and disease	20,942	25,015	84	22,837	21,989
Renewable resources evaluation	13,332	18,093	74	14,262	14,068
Renewable resources economics	4,841	7,867	62	5,424	5,217
Surface environment and mining	1,845	3,088	60	1,977	1,676
Subtotal	49,974	65,044	77	53,728	52,808
Renewable resources management and utilization research:					
Trees and timber management	20,710	26,718	78	22,217	20,819
Forest watershed management	9,555	12,559	76	9,480	10,047
Wildlife, range, and fish habitat	9,334	14,844	63	9,008	8,820
Forest recreation	2,150	5,943	36	2,210	2,200
Forest products utilization	17,483	21,840	80	16,860	15,490
Forest engineering	2,939	4,669	63	2,867	2,423
Subtotal	62,171	86,573	72	62,642	59,799
Research construction <u>1/</u>	388	3,200	12	3,318	4,266
Total, appropriated funds <u>2/</u>	112,533	154,817	73	119,688	116,873
Nonappropriated funds:					
Other Federal Government agencies	1,974	-- <u>3/</u>	--	1,993	932
State and local governments	60	--	--	131	32
Private industry	6	--	--	3	3
Other	77	--	--	87	55
Total, nonappropriated funds	2,117	--	--	2,214	1,022
Grand Total	114,650	154,817	--	121,902	117,895

1/ In order that a comparison may be made with 1982, general administration has been eliminated from individual line items. Total appropriated general administration funds are included in the "General Administration" line item on Table 2.

2/ Includes pay act costs and supplemental appropriations.

3/ -- = not applicable.

Table 54.--Extramural research funded through the Forest Service--fiscal years 1981 and 1982

Type of recipient	1982		1981	
	<u>1,000 Dollars</u>	<u>Number</u>	<u>1,000 Dollars</u>	<u>Number</u>
Domestic grantees:				
Universities and colleges:				
Land-grant research institutions	7,365	345	9,669	495
S&E-CR <u>1/</u>	422	9	981	20
1890 Land-Grant and predominately Black institutions	121	6	266	7
Other non-Land-Grant institutions	1,742	114	1,997	141
S&E-CR <u>1/</u>	122	5	96	5
Subtotal, Universities and colleges	9,772	479	13,009	668
Profit organizations	291	13	53	4
Nonprofit institutions and organizations	233	17	578	33
Federal, State, and local governments	391	13	350	9
Private individuals	79	10	43	5
Total, domestic	10,766	532	14,033	719
Foreign grantees:				
Universities and colleges	-- <u>2/</u>	--	107	4
Government agencies	82	4	--	--
Nonprofit institutions and organizations	14	1	62	2
Total, Foreign	96	5	169	6
Grand Total	10,862	537	14,202	725

1/ Grants executed by Science and Education-Cooperative Research with Forest Service Accelerated Pest Program funds.

2/ -- = No grantees in this category.

Table 55.--Statement of receipts--fiscal years 1978-82

Receipts	1982	1981 1/	1980 <u>1,000 dollars</u>	1979	1978
Receipts from sale and use of forest resources:					
Timber and forest products	251,022	581,441	625,407	827,603	723,514
Grazing	12,426	14,889	15,850	12,520	11,037
Land uses	2,860	2,422	2,336	2,117	1,864
Recreation	25,352	19,416	18,317	16,462	13,981
Power	679	485	488	429	388
Mineral leases and permits	57,885	62,080	40,472	21,878	14,756
Subtotal	350,224	680,733	702,870	881,009	765,540
Receipts from deposits for expenditures on National Forests:					
Timber sale area betterment	77,546	124,860	116,576	111,452	65,592
Timber salvage sales	6,822	11,884	14,530	12,387	8,397
Brush disposal	29,588	43,844	42,374	42,739	39,652
Restoration of improvements	56	97	198	33	29
Cooperative work	26,254	27,525	29,985	27,122	21,095
Subtotal	140,266	208,210	203,663	193,733	134,765
Other receipts:					
Misc. (sale, rents, etc.)	4,724	4,052	-2,375	8,850	3,801
Golden Eagle passports	4	4	5	4	5
Sale of personal property	42	40	47	108	51
Cooperative research	1,003	1,079	587	1,086	1,144
Royalties from sale of Smokey Bear and Woodsy Owl products	54	96	102	107	215
Acquisition of lands to complete land exchanges 3/	151	532	0	0	0
Subtotal	5,978	5,803	-1,634	10,155	5,216

See footnotes at end of table.

Table 55.--Statement of receipts--fiscal years 1978-82--Continued

Receipts	1982	1981 1/	1980 1,000 dollars	1979	1978
Other income:					
Estimated collections by Dep. of Energy for power licenses on Public Domain National Forest land	1,004 4/	542	86	614	474
Estimated collections by Dep. of the Interior for mineral leases on Public Domain National Forest land 5/	68,600	63,000	219,264 (47,000)	162,232 (35,000)	87,210 (34,200)
Value of roads built by timber purchasers in lieu of cash	164,128	189,559	164,226	154,727	124,181
Subtotal 5/	233,732	253,101	383,576 (211,312)	317,573 (190,341)	211,865 (158,855)
Other net deposits: 3/					
Moneys advanced on active timber sales:					
Bal. from previous year	231,450	268,574	0	0	0
Deposited current year	426,903	800,322	0	0	0
Trans. to other accounts	-514,773	-837,446	0	0	0
Bal. on deposit	143,580	231,450	0	0	0
Amounts deposited pending disposition:					
Bal. from previous year	12,372	7,780	0	0	0
Deposited current year	20,226	21,317	0	0	0
Trans. to other accounts	-20,115	-16,725	0	0	0
Bal. on deposit	12,483	12,372	0	0	0
Subtotal	156,063	243,822	0	0	0
Total 5/	886,263 6/	1,391,669 6/	1,288,475 (1,116,211)	1,402,470 (1,275,238)	1,117,386 (1,064,376)

1/ Adjusted to reflect increase in receipts received after 1981 report was published.

2/ Includes receipt account adjustment of \$2,700,000 from previous year.

3/ 1981 was first year of reporting.

4/ Increase due to an additional billing made by Federal Energy Regulatory Commission.

5/ Department of the Interior procedures for crediting mineral lease collections on National Forest System lands were revised in 1981. Previous years are adjusted and shown within parentheses.

6/ For comparison with past years, use total receipts, less other net deposits. Other net deposits not reported for previous years.

Table 56.--Statement of receipts--fiscal year 1982

Receipts	National Forests	Oregon and California grant lands	National Grasslands & L.U. Areas 1/ 1,000 dollars	Other	Total
Receipts from sale and use of forest resources:					
Timber and forest products	239,210	11,808	4	0	251,022
Grazing	10,876	10	1,540	0	12,426
Land uses	2,349	102	409	0	2,860
Recreation	25,338	0	14	0	25,352
Power	640	0	39	0	679
Mineral leases and permits	16,010	0	41,875	0	57,885
Subtotal	294,423	11,920	43,881	0	350,224
Receipts from deposits for expenditures on National Forests:					
Timber sale area betterment	77,546	0	0	0	77,546
Timber salvage sales	6,822	0	0	0	6,822
Brush disposal	29,588	0	0	0	29,588
Restoration of improvements	56	0	0	0	56
Cooperative work	26,254	0	0	0	26,254
Subtotal	140,266	0	0	0	140,266
Other receipts:					
Misc. (sale, rents, etc.)	0	0	0	4,724	4,724
Golden Eagle passports 2/	0	0	0	4	4
Sale of personal property 2/	0	0	0	42	42
Cooperative research	0	0	0	1,003	1,003
Royalties from sale of Smokey Bear and Woodsy Owl products	0	0	0	54	54
Acquisition of lands to complete land exchanges	0	0	0	151	151
Subtotal	0	0	0	5,978	5,978

See footnotes at end of table.

Table 56.--Statement of receipts--fiscal year 1982--Continued

Receipts	National Forests	Oregon and California grant lands	National Grasslands & L.U. Areas 1/ 1,000 dollars	Other	Total
Other income:					
Estimated collections by Dep. of Energy for power licenses on Public Domain National Forest land	1,004	0	0	0	1,004
Estimated collections by Dep. of the Interior for mineral leases on Public Domain National Forest land	68,600	0	0	0	68,600
Value of roads built by timber purchasers in lieu of cash	164,128	0	0	0	164,128
Subtotal	233,732	0	0	0	233,732
Total	668,421	11,920	43,881	5,978	730,200
Other net deposits:					
Moneys advanced on active timber sales					
Bal. from previous year	231,450	0	0	0	231,450
Deposited current year	426,903	0	0	0	426,903
Trans. to other accounts	-514,773	0	0	0	-514,773
Bal. on deposit	143,580	0	0	0	143,580
Amounts deposited pending disposition					
Bal. from previous year	12,372	0	0	0	12,372
Deposited current year	20,226	0	0	0	20,226
Trans. to other accounts	-20,115	0	0	0	-20,115
Bal. on deposit	12,483	0	0	0	12,483
Subtotal	156,063	0	0	0	156,063
Grand Total	824,484	11,920	43,881	5,978	886,263

1/ Land Utilization Projects.

2/ These receipts are credited to the Department of the Interior.

Table 57.--Statement of expenditures--fiscal year 1982

	Total	Work for other public agencies (reimbursables)
		<u>1,000 dollars</u>
National Forest System:		
Protection and management	569,720	13,699
Fighting forest fires	29,826	2,564
Cooperative work for others	26,751	26,751
Cooperative law enforcement	3,526	0
Flood prevention and watershed protection	4,063	-28 <u>1/</u>
Restoration of forest lands and improvements	64	64
Restoration of timber stand improvement	100,572	19
Timber sale betterment (K-V) <u>2/</u>	84,008	2
Brush disposal	38,834	12
Timber salvage sales	10,997	1
Oregon-California grant lands	1,618	0
Range Betterment	7,471	0
Construction of facilities	18,057	342
Acquisition of lands, Forest Service	629	0
Acquisition of lands, Land and Water Conservation Fund	14,842	0
Construction of forest roads and trails	263,347	295
Timber purchaser roads constructed by the Forest Service	40,999	0
Timber purchaser road construction <u>3/</u>	9,293	0
Restoration of roads, Federal highway funds	8,133	0
Roads and trails maintenance	77,347	574
Highland scenic highway	49	43
Mount St. Helens emergency activities	1,910	0
Tongass timber supply fund	45,894	0
General administration <u>4/</u>	242,193	337
Subtotal	1,600,143	44,675
Research:		
Forest research	114,485	4,545
Construction of research facilities	2,147	52
Cooperative research	1,113	1,113
Gifts, donations, and bequests for forest and rangeland research	50	72
Energy security reserve, DOE	544	532
Federal photovoltaics utilization program, DOE	266	266
Subtotal	118,605	6,580

See footnotes at end of table.

Table 57.--Statement of expenditures--fiscal year 1982--Continued

	Total	Work for other public agencies (reimbursables)
		<u>1,000 dollars</u>
State and Private Forestry:		
Cooperation and general forestry assistance	64,915	669
Resource conservation and develop- ment	687	0
Rural community fire protection grants	3,249	0
River basins	1,478	5
Flood prevention and watershed planning	1,661	0
Licensee programs, Smokey Bear, and Woodsy Owl	80	0
FIP, ACP, and miscellaneous	3,139	409
Subtotal	75,209	1,083
Human Resource Programs:		
Job Corps	52,387	299
YACC	20,249	47
Senior citizens and miscellaneous	15,845	1
Subtotal	88,481	347
Total	1,882,438	52,685
Internal equipment and supplies service:		
Working Capital Fund	111,004	111,004
Grand total	1,993,442	163,689

1/ Adjustment of amount reported in prior year.

2/ Knutson-Vandenberg Act

3/ Additional obligations in the amount of \$183,070 were incurred against nonfunded authority contained in P.L. 97-100.

4/ General administration also supports activities in Forest Research, Cooperation and General Forestry Assistance, and Insect and Disease Management.

Table 58.--Statement of expenditures--fiscal years 1978-82

	1982 <u>1/</u>	1981	1980	1979	1978
	Million constant 1982 dollars <u>2/</u>				
National Forest System	1,600.1	1,967.1	2,006.8	2,007.3 <u>3/</u>	1,811.4
Forest Research	118.6	141.7	137.6	150.0	151.9
State and Private Forestry	75.2	94.1	105.8	118.8	104.2
Human Resource Programs	88.5	134.2	181.7	204.8	214.1
Working Capital Fund	111.0	91.3	-- <u>4/</u>	--	--
Total <u>5/</u>	1,993.4	2,428.5	2,431.9	2,481.0	2,281.6

1/ All general administration expenditures are included in National Forest System for 1982; for past years they are included in each line item.

2/ CPI-U, all items, used for 1978-81.

3/ On behalf of the National Forest System, State and Private Forestry expended \$8.7 million. This amount is included in the State and Private Forestry figure.

4/ -- = Not available as separate item.

5/ Columns may not add due to rounding.

Table 59.--Distribution of employees by program and occupational category selected fiscal years

	1982	1981	1980	1975
Research:				
Clerical	599	665	627	460
Technical	1,071	1,096	968	528
Administrative	259	275	302	246
Professional	1,266	1,346	1,452	1,408
Subtotal	3,195	3,382	3,349	2,642
State and Private Forestry:				
Clerical	106	157	163	81
Technical	61	82	80	31
Administrative	34	46	42	28
Professional	229	366	347	256
Subtotal	430	651	632	396
National Forest System:				
Clerical	5,440	5,884	6,361	6,411
Technical	25,331	29,116	30,036	28,774
Administrative	2,917	3,037	2,370	1,860
Professional	10,201	10,191	9,082	7,562
Subtotal	43,889	48,228	47,849	44,607
Total	47,514	52,261	51,830	47,645

Table 60. --Distribution of employees by tour of duty as reported in July of selected years

	1982	1981	1980	1979	1977	1975
Permanent full-time	30,375	21,543	21,421	21,832	19,715	19,568
Other permanent	6,799	15,326	15,815	12,858	14,004	12,115
Temporary	15,624	19,053	24,043	25,450	20,480	18,076
Total	52,798	55,922	61,279	60,140	54,199	49,759

Table 61.--Summary of Forest Service Human Resource Programs--fiscal year 1982

Program	Program funding	Value of work accomplished	Number of persons served	Percent		Person years accomplished	Percent placement	Return per dollar invested
				Women	Minority			
<u>Million dollars</u>								
Youth Conservation Corps 1/	1.6	1.9	1,006	43	17	164	-- 2/	1.18
Young Adult Conservation Corps 1/	20.3	25.2	8,555	33	27	2,878	--	1.25
Job Corps	53.3	15.4	8,780	8	59	3,676	84	--
Senior Community Service Employment Program 3/	16.2	22.8	4,288	31	19	2,132	--	1.41
Volunteers in the National Forests	Unfunded	15.0	42,570	25	12	1,238	--	--
Hosted Programs	Unfunded	7.8	8,014	27	32	723	--	--
Total	91.4	88.1	72,213	--	--	10,811	--	--

1/ Figures listed are for the portion of the program operated by the Forest Service.

2/ -- = Not applicable.

3/ Statistics are for the July 1, 1981 through June 30, 1982, program year.

Revised Statement of Policy

Pursuant to section 310 of Public Law 96-514, dated December 12, 1980:

The Statement of Policy transmitted by the President to the Speaker of the House of Representatives and the President of the Senate on June 19, 1980, as required under section 8 of the Forest and Rangeland Renewable Resources Planning Act of 1974, is revised and modified to read as follows:

Basic Principles

It is the policy of the United States--

(1) forests and rangeland, in all ownerships, should be managed to maximize their net social and economic contributions to the Nation's well being, in an environmentally sound manner.

(2) the Nation's forested land, except such public land that is determined by law or policy to be maintained in its existing or natural state, should be managed at levels that realize its capabilities to satisfy the Nation's need for food, fiber, energy, water, soil stability, wildlife and fish, recreation, and esthetic values.

(3) the productivity of suitable forested land, in all ownerships, should be maintained and enhanced to minimize the inflationary impacts of wood product prices on the domestic economy and permit a net export of forest products by the year 2030.

(4) in order to achieve this goal, it is recognized that in the major timber growing regions most of the commercial timber lands will have to be brought to and maintained, where possible, at 90 percent of their potential level of growth, consistent with the provisions of the National Forest Management Act of 1976 on Federal lands, so that all resources are utilized in the combination that will best meet the needs of the American people.

(5) forest and rangeland protection programs should be improved to more adequately protect forest and rangeland resources from fire, erosion, insects, disease, and the introduction or spread of noxious weeds, insects, and animals.

(6) the Federal agencies carrying out the policies contained in this Statement will cooperate and coordinate their efforts to accomplish the goals contained in this Statement and will consult, coordinate, and cooperate with the planning efforts of the States.

(7) in carrying out the Assessment and the Program under the Forest and Rangeland Renewable Resources Planning Act of 1974 and the Appraisal and the Program under the Soil and Water Resources Conservation Act of 1977, the Secretary of Agriculture shall assure that resource and economic information and evaluation data will be continually improved so that the best possible information is always available for use by Federal agencies and the public.

Rangeland Data Base and its Improvement

The data on and understanding of the cover and condition of rangelands is less refined than the data on and understanding of commercial forest land. Rangelands have significant value in the production of water and protection of watersheds; the production of fish and wildlife food and habitat; recreation; and the production of livestock forage. An adequate data base on the cover and condition of rangelands should be developed by the year 1990. Currently, cattle production from these lands is annually estimated at 213 million animal unit months of livestock forage. These lands should be maintained and enhanced, including their water and other resource values, so that they can annually provide 310 million animal unit months of forage by the year 2030, along with other benefits.

General Acceptance of High Bound Program

Congress generally accepts the "high-bound" program described on pages 7 through 18 of the 1980 Report to Congress on the Nation's Renewable Resources prepared by the Secretary of Agriculture. However, Congress finds that the "high-bound" program may not be sufficient to accomplish the goals contained in this statement, particularly in the areas of range and watershed resources, State and private forest cooperation and timber management.

States and owners of private forest and rangelands will be encouraged, consistent with their individual objectives, to manage their land in support of this Statement of Policy. The State and private forestry and range programs of the Forest Service will be essential to the furtherance of this Statement of Policy.

In order to accomplish the policy goals contained in this statement by the year 2030, the Federal Government should adequately fund programs of research (including cooperative research) extension, cooperative forestry assistance and protection, and improved management of the forest and rangelands. The Secretary of Agriculture shall continue his efforts to evaluate the cost-effectiveness of the renewable resource programs.

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